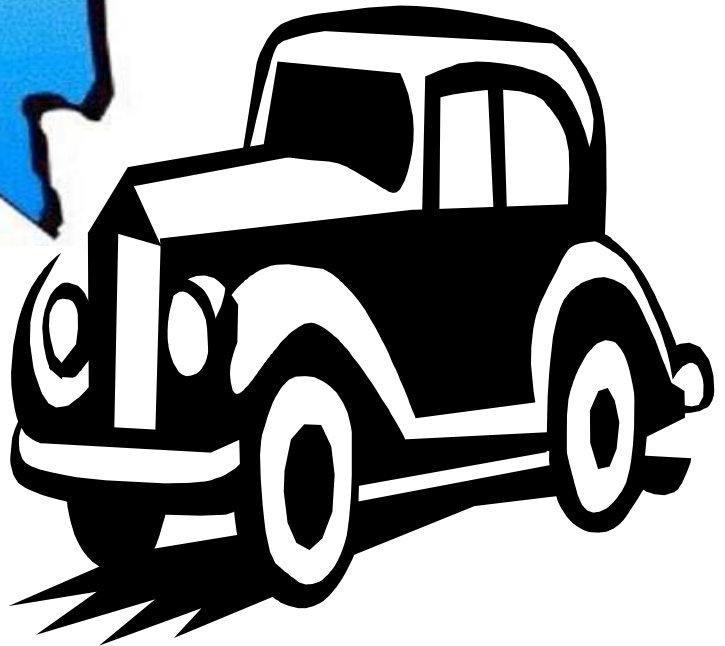


1G Emission Inspector Handbook



Emission Controls / Version 2
May 2003

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* The DMV 1G course is for class room instruction only, no hands on.

Preface

The goals and objectives of this class are:

- To give an understanding and a working knowledge of the State of Nevada Inspection/Maintenance program
- Introduction to the Rules and Regulations

- Introduce Emission test procedures which are covered in:
 - Federal Regulations
 - Federal Code Part 51 of Chapter I, title 40.
 - State of Nevada Regulations
 - Nevada Revised Statutes (NRS)
 - » NRS 445B.700 – 445B.845
 - Nevada Administrative Code
 - » NAC 445B.400 – 445B.853

- To educate applicants for:
 - Licensing Procedure
 - Written Test
 - Practical Test
 - State auditing/enforcement procedures
 - Actual emission test procedure
 - Two Speed Idle
 - OBD II

- We will make recommendations on customer service
- We will make recommendations on the safest way to do an emissions test
- The class should give you confidence, so that you may professionally serve the new and long time residents of Nevada.

Why is there an Inspection Maintenance Program?

- The main reason for an Inspection Maintenance Program (I/M Program) in Nevada is to:
- Improve the air quality in the State of Nevada
- Retain Federal funding for Nevada Highways
- Why do certain Counties and Cities have an I/M program?
 - Population becomes 100,000 or more or
 - A city or county fails air quality standards. (Fails air quality standards for 3 consecutive days in a one year period.)

- In any county whose population is less than 100,00, if the Environmental Commission determines that it is feasible and practical to carry out a program in that area

Public Assurance



Air Quality

PUBLIC ASSURANCE EQUALS BETTER AIR QUALITY

- Public assurance is safeguarding the public through:

Education

Licensing

Auditing

Enforcement

Instill public confidence in the emissions program

History



History

- The United States Congress passed the Federal Clean Air Act in 1970. This act set air quality standards for the nation.
- Areas of the country that could **NOT** meet these standards by 1982 were required to develop stricter programs.
 - The following shows how the State of Nevada has changed the I/M program over the years to comply with the Federal Clean Air Acts

- 1977 the Nevada Department of Motor Vehicles was given the responsibility of adopting and regulating the administrative codes for vehicle emissions testing.
- October 1983 Washoe and Clark counties started a yearly inspection program.
 - 1968 and Newer vehicles
 - Powered by Gasoline

- 1993 Washoe and Clark counties started a yearly Light-duty diesel program for:
 - 1968 and Newer vehicles
 - Passenger vehicles
 - 15 or less passengers
 - Sports Utility vehicle/Van Conversions
 - Light-Duty Diesel Trucks
- Also in 1993 an On-Highway Heavy-duty Diesel program was started.
 - Commercial trucks (18 wheelers)

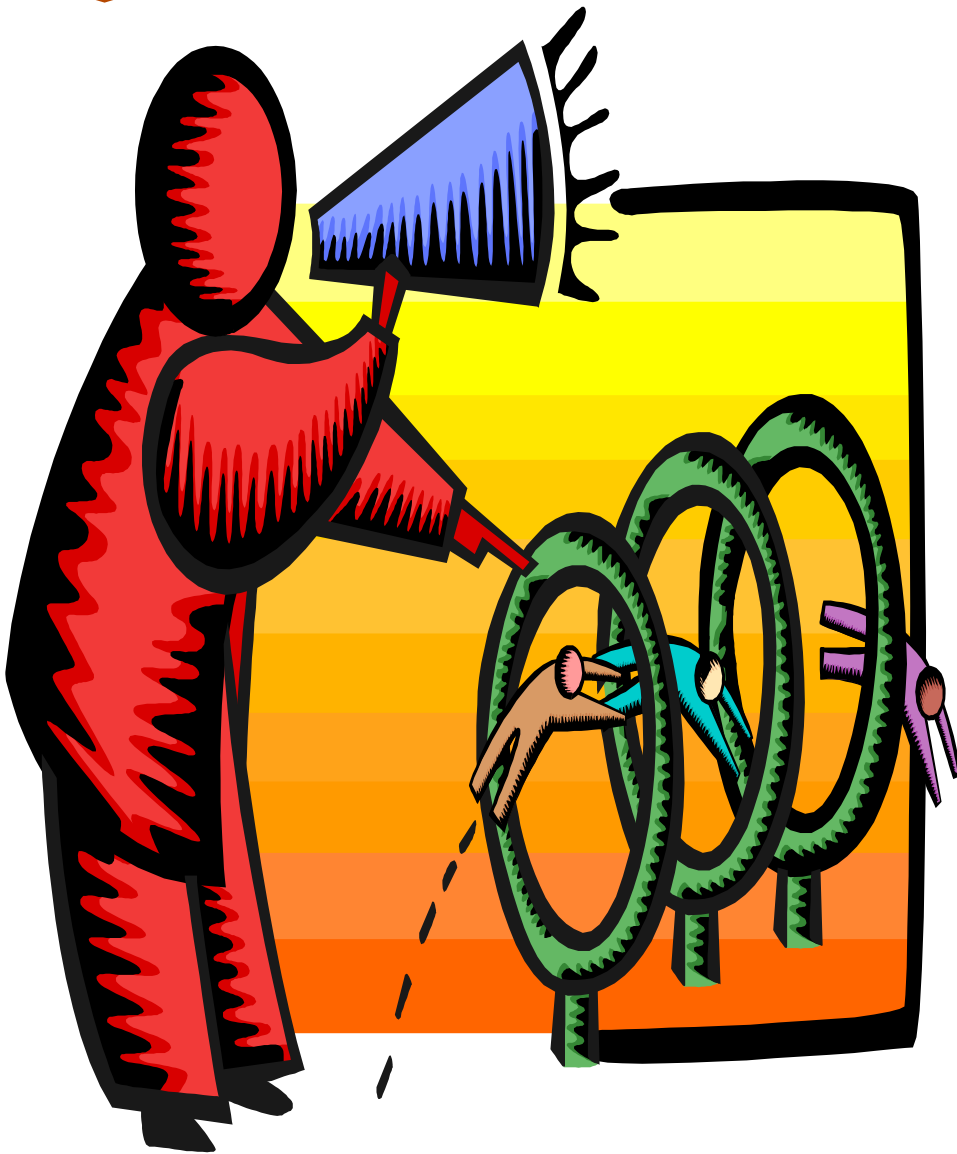
- In 1995 the State changed when a New vehicle needs an emission test for registration
 - Upon the third registration
 - 1st registration is when the vehicle is first purchased
 - 2nd registration is the first renewal
 - 3rd registration is the second renewal

- August 1996 a State Training Officer was hired for the Emission Program.
 - Phone Number 702-486-4999
- In late 1996 the Smoking Vehicle Hot Line came into existence
 - Reno 686-7664 (686-SMOG)
 - L.V. 642-7664 (642-SMOG)

- 2002, The State went to two different types of emission tests on light duty gasoline powered vehicles
 - 1968 through 1995 two speed idle
 - 1996 & newer model year, upon the third registration (light duty only) an On-board Diagnostics II (OBDII) emission test will be preformed.
 - 1996 & newer model year, on the third registration heavy duty gasoline powered vehicles will still require a Two Speed Idle test.

- The State of Nevada DMV now provides alternative registration renewal services to the consumer.
 - Online
 - Phone
 - Mail
 - Drop Box inside the DMV offices
 - Emission Station
- Must be enrolled with the State of Nevada
 - Application must be filled out

licensing



- **Class 1 (1G) Approved Inspector**

An inspector who is licensed by the department only to test exhaust emissions

- **Class 2 (2G) Approved Inspector**

An inspector who is licensed by the department to test exhaust emissions and to diagnose, repair and adjust devices for the control of exhaust emissions

Station Licensing

- Class 1 Station 1G
(Test Only)
- Class 1 Fleet Station 1G Fleet
(Test Only)
- Class 2 Station 2G
(Test & Repair Station)
- Class 2 Fleet Station 2G Fleet
(Test & Repair Station)
- A packet can be picked up at the Occupational Licensing counter for starting:
 - A State of Nevada Authorized Emission Inspection Station (1G)
 - A State of Nevada Authorized Emission Test and Repair Station (2G)

- Authorized Emission Inspection Station (1G) Test only
 - Needs to employ a full time inspector
 - That has a current 1G or 2G inspector license
 - It is recommended the owner becomes a license inspector
 - A full time emission inspector **MUST** be at the Emission Station during normal business hours.

- All Authorized Stations shall post their business hours in an area frequented by customers.
- The posted business hours will be considered the normal business hours for the station.
- A 2G inspector must be on site at all times during the posted business hours. NAC 445B.475

Class 1 Inspection Station or Class 1 Fleet Station (**1G**)

- An Authorized Inspection Station (Test Only 1G) can do Emission Testing and a **LIMITED** amount of engine maintenance. (NAC445B.460 paragraph 4 Section A,B&C)
 - Change Oil
 - Replace Oil Filter
 - Air Filter
 - Fuel Filter
 - Belt
 - Hose

- 445B.460 Section (C)
- On 1980 and older vehicles that have not failed it's most recent emission test performed in this State,an Authorized Inspection Station may:
 - Replace spark plugs
 - Replace secondary cables for plug wires
 - Replace distributor cap and/or rotor
 - Replace points and or condenser
 - Adjust dwell and initial ignition timing of the engine

- Adjust settings for idle speed
(Only if those settings are accessible)
- It is highly recommend that you call the Emissions Lab in your area to **VERIFY** that the vehicle passed it's **MOST RECENT EMISSION TEST** in this State before proceeding with any repairs listed in Section C.
- It is a violation of NAC 445B.460 Section C for a 1G station to perform any emission related repairs on any vehicle that has failed it's most recent emission test in this State.

Nevada Authorized Emission Test and Repair Station (2G)

- A full time 2G inspector **MUST** be at the 2G Emission Station during the stations posted business hours.
- Can do Emission Test and Emission related repairs
 - Install and adjust manufacturers emission devices

A 1G Emission Station that **FAILS** to employ an approved Inspector **MUST:**

- Immediately **STOP** operating as a Test Station
- Remove or cover the outdoor emission sign.
- Notify the DMV Emission Lab personnel that an approved inspector is not employed.
- 1G Station **MUST** hire an Inspector within 60 days

- After 60 days the 1G Station will be put Out of Business
- If the owner/principal wants the station to perform emission tests again:
- The owner/principal would be required re-apply for a Class 1 license (1G)

2G Emission Station that **FAILS** to employ an approved 2G Inspector

- 2G Station needs to notify the Emission Lab within **2** business days
 - Follow the required steps for a 1G station unless
 - A current 1G inspector is employed at the time the 2G inspector leaves.

- Station can operate in a 2G capacity for 120 days
 - Within a 12 month period
 - As long as the 1G Inspector remains employed full time
- Each time a 2G inspector leaves the same 2G station, days are counted against the original 120 days for that twelve month time period.
- Example:
 - The only 2G inspector leaves October 1st 2002. It is 60 days before the station hires a new 2G inspector. That leaves 60 days out of 120 days until October 1st 2003³²

- When the **ONLY** 2G inspector leaves (No 1G is employed at the time the 2G inspector leaves)
 - The Emission Lab must be notified within **2** business days
 - The station will be placed Out of Business

Advertising (NAC445B.471)

- A test station (1G) **SHALL NOT** intentionally publish, display or circulate any material that is:
 - Inaccurate or;
 - Misrepresents any services rendered

- A test station (1G) **cannot** advertise any emission testing on 1980 and older vehicles in conjunction with the **REPLACEMENT** of:
- Spark plugs
- Spark plug wires
- Distributor cap and/or rotor
- Points or condenser

- An authorized station (1G) also cannot advertise in conjunction with an emission test:
 - Any adjustment of dwell
 - Adjustment of initial timing
 - Settings for air/fuel mixture
 - Settings for idle speed

- A test station that publishes any advertisement, promotional material or coupons must :
- **CLEARLY** state the total dollar amount to be paid by the customer
- Must be comparable in size and style
- May **NOT** use abbreviations or terms peculiar to the emissions industry
- The department will consider advertising to be deceptive if an ordinary and reasonable customer with **NO** experience in the control of emissions could not understand the advertisement.

- Emission Test Stations (1G or 2G) will:
 - post in a conspicuous place the business hours when they will be performing emission testing.
 - Adhere to **Posted** business hours
 - **TEST** any motor vehicles that requires an emission test that is presented at its facility
 - Unless there is a safety issue
 - Or a dilution problem is present
 - **There is NO** pretesting in the State of Nevada

1G Inspector Licensing

- To obtain your 1G license you must:
 - Complete an outside 1G training course approved by the department
 - Or have a current certificate from ASE (Automotive Service Excellence) A8 or L1
 - Complete the departments Rules and Regulations Class
 - (Conducted by the DMV)

- Pass a 1G written test with a score of **80%** or **higher** given by the department
- Submit a certificate of competence from the Emission analyzer manufacturer

OR

- Demonstrate to the department your ability to adjust and operate the Emission analyzer **SUCCESSFULLY.**

- Pass a practical demonstration
- At the time of the Practical Exam you will need to bring the following documentation:
 - Personal History Questionnaire (PHQ)
 - 2 photos
 - Child Support Information
 - Will be filled out when you go through the 1st time and Renewal licensing procedure

- Authorization for Release of Information
 - This allows the department to do a background check on the applicant
- Certificate of Employment
 - You will need to submit a new Certificate of Employment at every licensing transaction.
- Emission Inspection Practical Examination Training Checklist
 - Signed and dated

- An inspector license can be denied, suspended, or revoked if you knowingly submit information that is:
 - False
 - Inaccurate, or
 - Misleading
- Or Conceal any material fact on the license application
- NAC445B.489

- Photos supplied by applicant should be:
 - Front view of the face
 - Shoulders up
 - A minimum of 2
 - 1” X 1” and 3” X 3”
 - 2 Polaroid pictures that can be cut
 - Additional 1” X 1” for each additional inspector license that you want
 - Multiples (dual), renewals, and transfers

Licensing Fee

- Initial license is \$25.00
- Biennial renewal license is \$25.00
- Dual license is \$10.00
- Transfer license is \$10.00

Change of Employment:

- Licensed Inspector **MUST** notify the department in writing within **10** days or:
 - The Department may deny, suspend, or revoke your next Inspector license
- When rehired an inspector must complete a
 - New Certificate of Employment

- Supply a 1” X 1” photo for each inspector license

- **MUST** be

- Front view of the face

- From the shoulders up

1G Testing Requirements

- Prior to getting your first license:
 - You must have a certificate from an approved outside training source conducted within the last 12 months or an ASE A-8 or L-1 certificate. (A-8= Engine Performance, L-1 = Advanced Engine Performance)
 - You must attend a DMV Rules& Regulations class.
 - A person **MUST** take and pass a 1G written and practical test given by the department.
- Every two years you **MUST** take a Recertification Class to keep your 1G or 2G license current. (Your license is good for 2 years)

- You may renew a 1G license 90 days prior to the expiration date.
- This will not change the expiration date on the license.
 - The analyzer is programmed to remind you 60 days prior to the expiration date of your license
 - » Every time you do an emissions test
- However it is your' responsibility to know when your' license expires.

- What happens if you **FAIL** the written (1st time or recertification) or the practical test?
 - 1ST time a person fails there is a **7 DAY** wait
 - 2ND time a person fails there is a **90 day** wait
 - 3rd time a person fails there is a **180 day** wait and a person **MUST**
 - Submit proof of attending additional training
 - The training must be approved or conducted by the Department

- 2ND time a person fails there is a **90 day** wait
- 3rd time a person fails there is a **180 day** wait and a person **MUST**
 - Submit proof of attending additional training
 - The training must be approved or conducted by the Department

2G Inspector Licensing

- 2G Applicant **MUST** meet
 - Within the last 12 months **ALL** 1G requirements
 - Take and pass a 2G written test
 - Given by the department
 - The first attempt no training is required. This is your free shot at taking the 2G test (Call the Emission Lab to schedule a test date)
 - Passing score is 80% or better
- OVERALL**

- Or you have a current Automotive Service Excellence Certificate (ASE) L-1 (Advanced Engine Performance)
- The L-1 certificate option only applies to first time 2-G applicants. It does not apply to renewals.
 - There are currently 6 modules on the 2G test
 - Combustion and Compression
 - Electrical
 - Ignition
 - Air/Fuel
 - Computer Controls
 - Emissions

An Inspector Needs to Follow the Following Steps, after Failing the 2G Test

- Submit proof of attending an outside training class approved by the department
 - The certificate of training must show training in the module(s) that were failed and must have taken place after the date of the most recent failed 2G test.
- Retake the departments 2G test
 - Note: If you choose to retake the whole 2G exam all past test scores will no longer count. Only your current score will be accepted!
 - **ONLY** need to take failed module(s)
 - May retake the whole test and try to better your overall score
 - Or take and pass ASE L-1

2G License Renewal

- **MUST** go through the 1G license renewal procedure
 - 1G Re-certification Class every two years given by the Department
- First option:
- **MUST** take a 2G refresher training course
 - 20 hour course and,
- Take the approved test at the end of that training course (This test is given in lieu of the DMV test)

Second option:

Take the twelve hour course
(Outside training) and,

- Take the departments 2G
Recertification test

- Third Option:

- Or take the 2G refresher course
and pass the Automotive Service
Excellence (ASE) L1 exam

- Within the last 12 months

- Prior to the expiration date
on your 2G license

Station



Audits

DMV Emission Station Audits

- Overt audits:
 - At least once a month
 - DMV Emission Technician
- An Emission Station 1G or 2G must have the following on Display:
 - Inspector(s) licenses
 - Outdoor Metal emission sign
(Must be maintained by the station)
 - Indoor information placard
(Provided by the DMV)

- Information pamphlets (Provided by the DMV)
- 2G Station List (Must be given to all failing emission test customers at 1G stations)NAC445B.5895 We request that all 2G stations hand out a 2G list to any customer who fails an emission test but is not having the repairs done at that station.
- Must have available (on site):
 - The Rules & Regulations handbook (Blue Book)
 - Quick reference analyzer guide (Provided by Worldwide)
 - Emission Control Systems Application Manual (1G & 2G)
 - 2G stations **MUST** have repair and maintenance information in the form of printed or electronic media (1968 to within 2 years of the current year)

Emission Analyzer Audit

- DMV Emission Technician will perform an audit of the emission analyzer.
 - Overall inspection to make sure the analyzer meets manufacturers specification (All analyzer equipment is present and functional)
 - Leak checks
 - Single and Dual probe
 - State gas audit

- When a problem is found and can **NOT** be corrected by the station at the time of the audit
 - The analyzer will be locked out until the repairs are made
- When the repairs meet manufacturers specifications and have been verified by a DMV Emissions Technician
 - The analyzer will be unlocked

Field Remedial



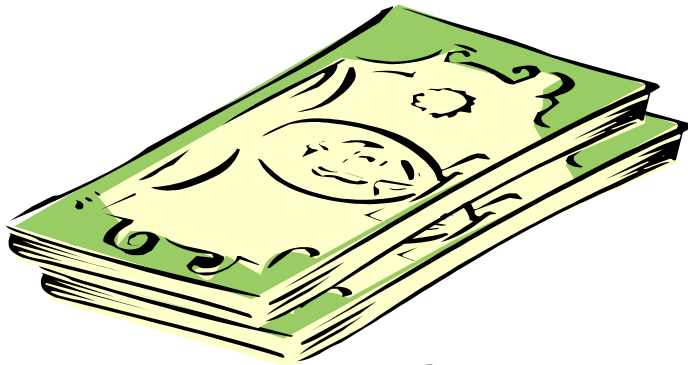
Training

Field Remedial Training

- DMV Emission Technician may openly monitor activities at Emission Stations (1G or 2G)
 - Within the first 60 days of your **NEW** inspector license you may have field remedial training
 - Any time through out your career as a licensed emissions inspector you may have random field remedial training
- DMV Emission Tech. Will observe you doing emission testing on customer vehicles at your place of employment.

- Any problems that are noted will be reviewed with the inspector & the manager or owner.
 - A performance report will document the problems that were noted during the emission test
 - The performance report will be signed and dated by the Inspector and the DMV Emission Technician
 - The performance report will go in your inspector file

Covert Audits



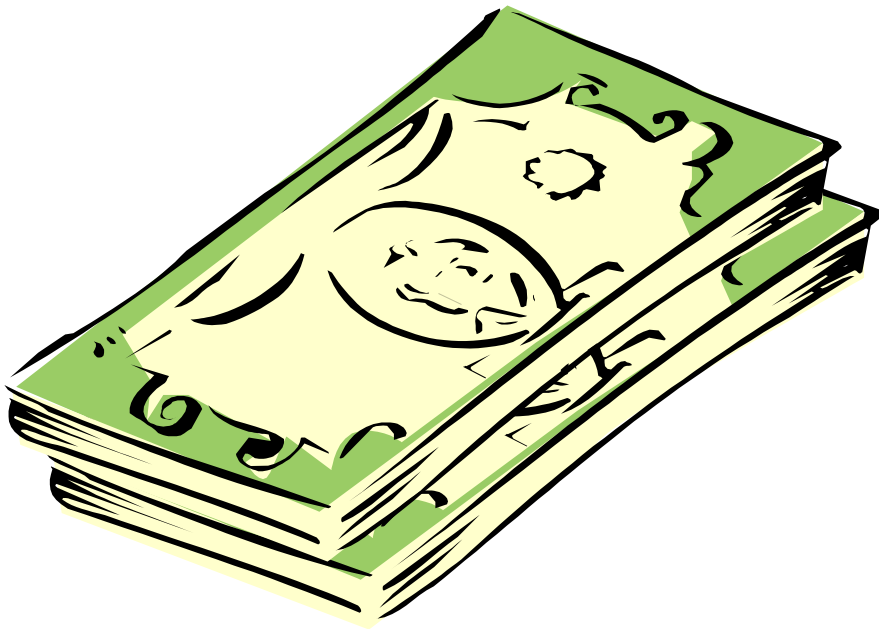
Spot Checks

Covert Audits/Spot Checks

- The DMV sends a spot check vehicle to each Emission Station (1G or 2G) at least twice a year
- A spot check vehicle has previously been prepared by the DMV Emissions Technicians to Pass or Fail the State of Nevada's emission test.
 - The prepared vehicle will have documentation on what emission devices and/or emission systems that were tampered with.

- An emission test will be performed on the vehicle by a DMV Emissions Technician before the vehicle is sent out to the station.
- The spot check vehicle will then be sent to selected emission station for an emission test
- A station and/or an inspector will receive results from the Department on how well they performed the emissions test on the spot check vehicle.

Administrative



Fines

Administrative Fines

- Inspectors and Station Owners may be fined based upon violations occurring within a 3 year period of time immediately preceding the most recent violation. (NAC 445B.727)
- The owner of the emission test station is responsible for any act or omission of an approved inspector employed by the test station which is committed while the inspector is acting within the scope of his employment (NAC 445B.4985)

Inspector's Responsibility

- A licensed inspector is responsible for:
 - NRS 445B.700 to 445B.845
 - NAC 445B.400 to 445B.737
- This information is located in the Blue Rules and Regulations notebook found at an emission stations
- Educate yourself with past and current technology in the automotive industry

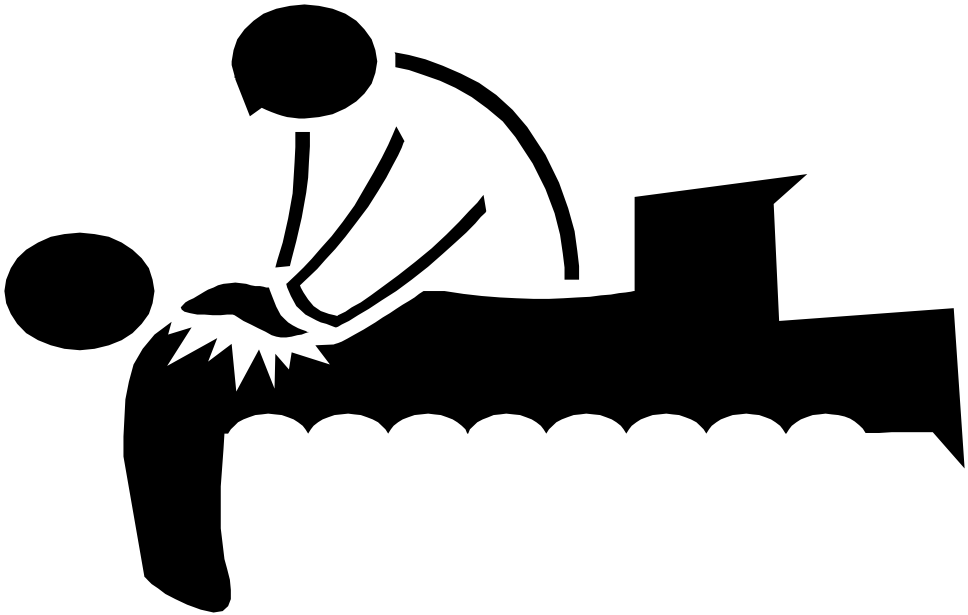
Administrative Fine Schedule

- The first violation may be a cease and desist order or a fine of \$100 to \$500 dollars
 - When a cease and desist order is issued by the department it counts as the first violation
- The second violation may be a dollar amount somewhere between \$500 to \$1000

- The third violation may be in the dollar amount somewhere between \$1000 to \$1500
- The fourth or subsequent violation may be in the dollar amount somewhere between \$1,500 to \$2,500
- The Department may revoke, suspend, or deny a license when an inspector **ALLOWS** an emission test to be completed by:
 - A person that is **NOT** an approved licensed inspector

- A license that has been denied, revoked, or suspended an inspector:
 - **MUST** remove the grounds for the denial, revocation, or the suspension
 - Can reapply after 1 year for a new license (no guarantee that you will get another license).

Failed Emission Test



Does it help a person?

How does a Failed Emission Test Help?

- The first failed emission test is the beginning of the waiver process.
- 10 Day permits
 - Must have a failing emission test
- Challenge Test can be performed on any vehicle with a current smog
 - Vehicles that failed HC and CO
 - Vehicles that failed visible smoke
 - Vehicles that failed tampering inspection
 - No repairs made to the vehicle between the first emissions test and the challenge emissions test

- After a challenge test is performed the DMV Emission Tech
 - Reviews the results with the customer
 - Explains the waivers procedure (if needed)
 - Will give out any written information that they did not receive at the emission station
- Will answer any question about the emission program to the best of our ability

**Is an Emissions Test
Required**



**OR
Not Required**

Vehicles Requiring an Emission Test in Nevada

- 1968 and Newer (upon 3rd registration) gasoline powered vehicles
 - Based in an I/M area within Clark and Washoe County
 - State and Federal (US Government) vehicles 1968 and Newer (upon 3rd registration) operated in Clark or Washoe County
- Residency Affidavit for other states

PRIVATE PARTY SALES

- Private individuals selling a vehicle are **NOT** responsible for providing a Nevada Emission Test (VIR) to the purchaser.
- The seller is required to make sure all manufacturer emission devices **ARE** present and appear to be functional.
- The Nevada emission inspection requires that the emission inspector check to ensure that the following systems are present and appear to be functional:
 - Catalytic Converter, Fuel Inlet Restrictor, Air Injection System, Exhaust Gas Recirculation System and Gas Cap.

Nevada Dealer Vehicle Sales

- Nevada dealers offering a used motor vehicle for sale **MUST**:
 - Have all factory installed emission devices present
 - Appear functional
 - **MUST** provide a passing Vehicle Inspection Report at the time a dealer report of sale is issued.
- When the purchaser lives in an area of Nevada that requires emission testing (example: an out of county dealer selling a vehicle to a resident within an **I&M AREA** of Clark or Washoe counties)

- Classic Vehicles (Special License Plates)
 - Nevada Resident
 - Passenger Car or Light Commercial Vehicle (1 ton or Less)
 - Manufactured at least 25 years before the application is submitted to the department
 - Current Year minus 25

- Containing **ONLY** the original parts which were used to manufacture the vehicle or replacement parts that duplicate those original parts
- Will **NEED** to have a passing emission test when the application for Classic Vehicle Plates is submitted to the department
- Will **NEED** mileage statement each year upon renewal that shows the vehicle was driven 2,500 miles or less
 - When driven over 2,500 miles will need to be emission tested again

- Classic Vehicle Plates application is **ONLY** submitted on the first registration for Classic Vehicle Plates
- Classic Rod Plate
 - Nevada Resident
 - Passenger Car or Light Commercial Vehicle carrying capacity of 1 ton or Less
 - Manufactured not earlier than 1949, but at least 20 years before the application is submitted to the department

- Will **NEED** to have a passing emission test when the application for Classic Rod Plates is submitted to the department
- Will **NEED** mileage statement each year upon renewal that shows the vehicle was driven 2,500 miles or less
 - When driven over 2,500 miles will need to be emission tested again
 - Classic Rod Plates application is **ONLY** submitted on the first registration for Classic Vehicle Plates

Exempt Vehicles

- Motorcycle or moped.
- Motor vehicle which is subject to prorated registration pursuant to N.R.S. 706.801 inclusive, and is not based in this state.
- New motor vehicle is exempt until the third registration of the vehicle. (N.A.C. 445B.592)
- Motor vehicle permanently converted from gasoline to propane, compressed natural gas, methane or butane as a fuel. (vaporized fuels)

- Motor vehicle with a model year before 1968.
- Transfer of ownership of the vehicle within 90 days of the current emission inspection.
- Transfer of ownership between husband and wife anytime within one year.

Exempt Areas Within Clark County

- Bunkerville
- Goodsprings
- Sandy Valley
- Mesquite
- Searchlight
- Cal-Nev-Ariz
- Laughlin
- Mt. Charleston
- Indian Springs
- Jean
- Logandale
- Moapa
- Overton
- Cottonwood
- Nelson

Exempt Areas Within Washoe County

- Crystal Bay
- Gerlach
- Nixon
- Wadsworth
- Empire
- Incline Village

CAUTION!! CAUTION!!

89511, 89521 and 89434 in Washoe County will require a smog.

89511, 89521 and 89434 in Storey County Will Not require a smog.

HOME BUILT VEHICLES

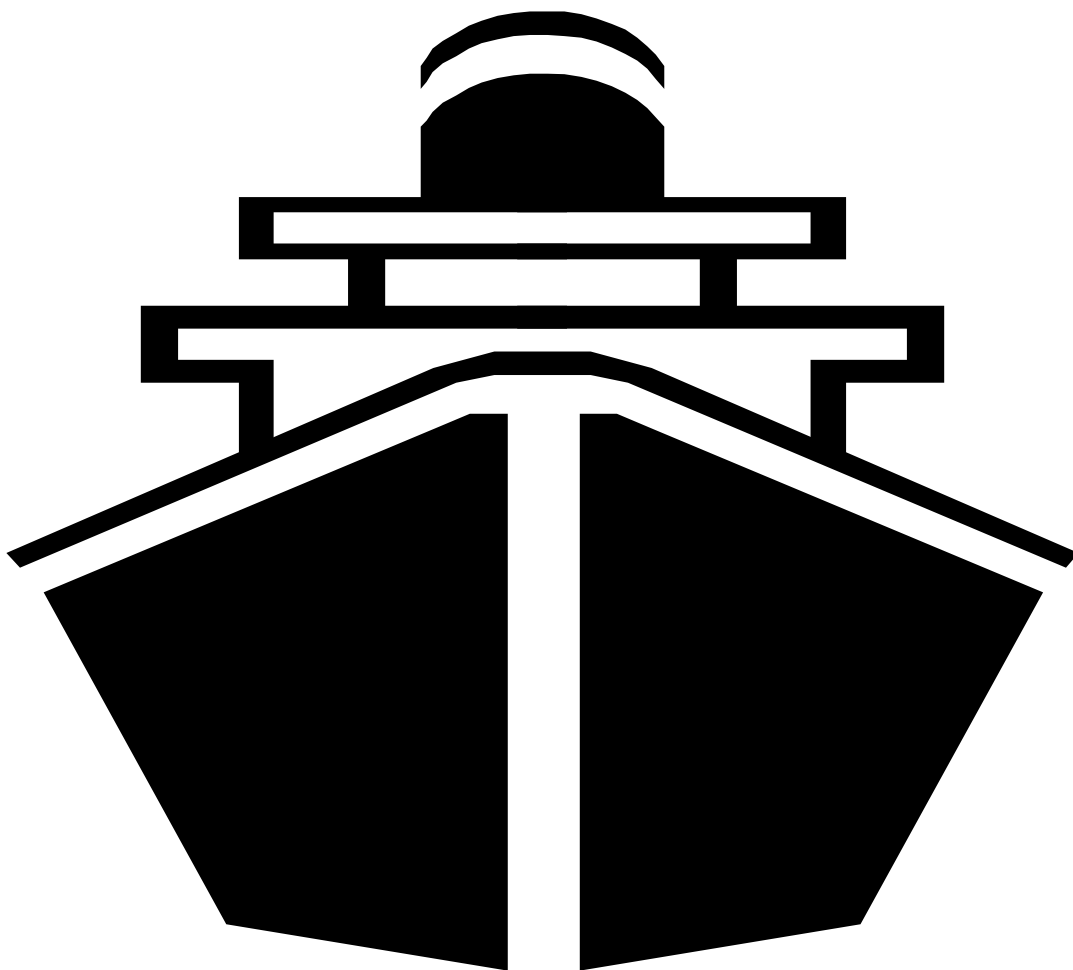
- Home built vehicles are tested by the year of the engine;
 - The owner **MUST** provide written proof of the year of the engine.
 - Documentation that is accepted
 - Engine number break down from the engine manufacturer
 - Published literature
 - VW for Dummies

- When the year of the engine can **NOT** be determined
 - That vehicle **WILL** be tested as the year that appears on the title or registration. This is the **only** time that you may use the registration or title to obtain emission testing information.

CANADIAN VEHICLES

- Some Canadian vehicles can be brought into and registered in the United States.
 - The door post sticker or emission label should tell you if the vehicle is legal for use in the United States.
- The emission label can be in English, French or both.
- The information for Canadian vehicles can be found on:
 - Emission label
 - Some books
 - Some CD ROM system.

GRAY MARKET VEHICLES



FOREIGN/GRAY MARKET VEHICLES

- A foreign or gray market vehicle is:
- A vehicle that is manufactured for sale in a country other than the United States
 - May not meet US safety standards
 - Must be approved by US Customs and the Environmental Protection Agency before being allowed to enter the country.
 - Must be sent to the Emission Lab for verification
- The 10th digit of the VIN may **NOT** be the model year.

P, T, or M



Passenger Car
Truck
Motorhome

P, T, and M

- The State of Nevada I/M program has three definitions for vehicle types they are:
 - Passenger Vehicle
 - Trucks/Cargo Van
 - MotorHome / Heavy-Duty Motor Vehicle
- There is only two emission standard classifications for these types of vehicles:
 - Light Duty Standards
 - Heavy Duty Standards

- Passenger Vehicle
 - Built to carry **FIFTEEN** people or **LESS**
 - A passenger van is designed to carry people not cargo



– Van Conversion (Passenger Vehicle)

- A vehicular type unit originally designed and manufactured as a van or enclosed truck, which is modified to be used for travel, camping or recreational use, but which retains the basic silhouette of a passenger van



– Sport Utility Vehicles (Passenger Vehicle)

- Broncos, Blazers, Jeeps, Suburban, Pathfinders, and 4-Runners etc...



Emission Testing Passenger Vehicles

- When prompted by the analyzer screen for **VEHICLE TYPE**
 - A vehicle that matches one of the definitions for **P**
 - An emission inspector **WILL** highlight or click **Passenger**
- Depress the enter key
 - This confirms the entry

- A passenger vehicle will be tested at light duty standards

- Automatically

- ## Truck/Cargo Van Definition

- A vehicle which is used for the transportation of property; and
- A vehicle whose body has been designed and built for that purpose.

- Pickup trucks = T
- Cargo Van/ Delivery Van = T
- An Emission Inspector **MUST** take an extra step when testing Pickup trucks, Cargo Vans, or Delivery Vans.
 - The extra step is entering the GVWR (Gross Vehicle Weight Rating)

Testing a Truck

- When prompted by the analyzer for **VEHICLE TYPE**
 - A vehicle that matches the definition for truck
 - An emission inspector **WILL** highlight or click **Truck**
- Depress the enter key
 - This confirms the entry

- The analyzer will prompt you for the **Gross Vehicle Weight Rating** (GVWR)
 - The GVWR is found on the drivers door or the door post
 - Do **NOT** confuse the GVWR with the axle rating
- If there is no GVWR you will need to call the Emission Lab in your area

–A GVWR of **8,499** pounds or **LESS** will automatically be tested at Light Duty Standards

–A GVWR of **8,500** pounds or **MORE** will be automatically tested at Heavy Duty Standards

- Do **NOT** obtain the GVWR from the registration certificate

– The default on a registration certificate is 5999

!!CAUTION!!

- A owner of a vehicle can **NOT** change the Manufacturer's Vehicle Certification.
 - An owner can **NOT** make a Passenger Van into a Cargo Van

Heavy Duty Motor Vehicle Definitions

- A vehicle built to carry **16** or **MORE** people (bus)
- **MOTOR HOME**, **MINI MOTOR HOME**, and **CHASSIS MOUNTED CAMPER**
- When prompted by the analyzer
 - An emission inspector **WILL** highlight or click **Motorhome/bus**
 - Depress the enter key
 - This confirms the entry

- The Department may deny, suspend, or revoke an inspector's license when he makes an inaccurate determination regarding a classification of motor vehicle (NAC445B.489 paragraph 9)



P T M

WHY? _____



P T M

WHY? _____



P T M

E-XLT WAGON

WHY? _____



P T M

WHY? _____



P T M

WHY? _____



P T M

WHY? _____



P T M

WHY? _____



P T M

WHY? _____



P T M

WHY? _____



P T M

WHY? _____

UNDERHOOD EMISSION LABEL

- Through the use of codes and the written information, the emission label provides information about the vehicles emission systems, certification status and tune up data.
- The emission label is broken down into four areas:

- AREA 1 Engine Family Code
- The family code has twelve alpha/numeric characters. The family code has gone through three periods of distinct formatting. The three periods are 1981-1993, 1994-1997, and 1998-present.
- AREA 2 The Certification Statement
 - This statement will indicate the model year of the vehicle.
 - If the label appears altered in any way
 - Check model year against VIN and any reference book that you have

- It will also indicate where this engine is certified to operate.
 - Conforms to EPA and/or California specifications
 - 49 state or California
- AREA 3 The Catalyst Statement
 - In this statement the manufacturer is required by the federal government to indicate whether the vehicle has a catalyst or is non catalyst.
 - Some manufacturers will also list additional emission devices in this section.

- AREA 4
 - The vacuum hose routing diagram.
 - The diagram will show any emission devices that are vacuum operated.

CHARACTER 1= MODEL YEAR

- A 1980 L 1990 Y 2000
- B 1981 M 1991 1 2001
- C 1982 N 1992 2 2002
- D 1983 P 1993 3 2003
- E 1984 R 1994 4 2004
- F 1985 S 1995 5 2005
- G 1986 T 1996 6 2006
- H 1987 V 1997 7 2007
- J 1988 W 1998 8 2008
- K 1989 X 1999 9 2009

Engine Family Code 1981-1993

<u>F</u>	<u>F</u>	<u>M</u>	<u>5</u>	<u>.</u>	<u>0</u>	<u>V</u>	<u>5</u>	<u>H</u>	<u>B</u>	<u>H</u>	<u>B</u>
1	2	3	4	5	6	7	8	9	10	11	12

Character 1 The vehicles model year

Character 2&3 Engine manufacturer

Character 4,5&6 Engine displacement
in cubic inches or liters.

Character 7 Vehicle classification

Character 8 Fuel metering system

Character 9 Type of catalyst

F	F	M	5	.	0	V	5	H	B	H	B
1	2	3	4	5	6	7	8	9	10	11	12

- Character 10 & 11 Unique code

Character 12 check sum

CHARACTERS 2&3

MANUFA CTURER	BEFORE 1994	1994-1997
Audi	AD	SAME
BMW	BM	SAME
Cadillac	2G	2G,GM
Oldsmobile	2G	2G,GM
Buick	2G	2G,GM
Chevrolet	1G	1G,GM
Pontiac	1G	1G,GM
Chrysler	CR	SAME
Daihatsu	DH	SAME
Ferrari	FE	SAME
Ford	FM	SAME

CHARACTERS 2 & 3

Honda	HN	SAME
Hyundai	HY	SAME
Isuzu	SZ	SAME
Jaguar	JR	JC
Mazda	TK	SAME
Mitsubishi Manu.	DS	SAME
Mitsubishi Sales	M3	SAME
Nissan	NS	SAME
Porsche	PR	SAME
Rover	LR	SAME
Saab	SA	SAME
Saturn	4G	4G,GM

CHARACTERS 2 & 3

[illegible]

CHARACTERS 4,5&6

ENGINE DISPLACEMENT

- The decimal point is equivalent to a character
 - Count the decimal point as one place
 - The displacement is measured in cubic inches or liters.

CHARACTER 7

VEHICLE CLASSIFICATION

- V Light duty vehicle
(gasoline)
- T Light duty truck (gasoline)
- D Light duty diesel vehicle
- K Light duty diesel truck
- W California standard gasoline
vehicle
- E 100K California diesel
vehicle
- Z Light duty vehicle (gasoline)
Canada

CHARACTER 8

FUEL METERING SYSTEM

- 0 Multiple carburetors
- 1 One BBL
- 2 Two BBL
- 3 Three BBL
- 4 Four BBL
- 5 Electronic fuel injection (TBI)
- 6 Mechanical fuel injection (MFI)
- 7 Manifold fuel injection (MFI, DIESEL)
- 8 Ported fuel injection (PFI)
- 9 Other PFI

CHARACTER 8

FUEL METERING SYSTEM

- Note: Automobile manufacturers are allowed a great deal of flexibility in naming their specific type of fuel injection systems. For example, Nissan uses code 9 to identify any type of fuel injection system utilized. Other resources may need to be used to determine the fuel metering system.

CHARACTER 9

TYPE OF CATALYST

- A = Single oxidation
- B = More than one oxidation
- C = Single reduction
- D = More than one reduction
- E = Three-way with no feedback control of air/fuel ratio
- F = Three-way with feedback control of air/fuel ratio
- G = Three-way plus other catalysts with no feedback control of air/fuel ratio
- H = Three-way plus other catalyst with feedback control of air/fuel ratio
- J = No catalyst (Canada with cat) 127

CHARACTER 9

TYPE OF CATALYST

- K = Other
- L = Three-way with fuel injection (JEEP)
- N = Three-way with downstream air (ORC/OC)
- T = Three-way (ORC/PELLET TYPE)
- X = Three-way (ORC/MONOLITH TYPE)
- Z = Diesel (NON-CATALYST)

CHARACTER 10

CATALYST DESIGNATOR

This describes the total loading of precious metals, the total volume area and the type of catalyst.

CHARACTER 11

ALPHA/NUMERIC CODE

- This code makes the the first series of digits unique.

CHARACTER 12 CHECK SUM

- The check sum digit is used to ensure that the characters entered are correct

ENGINE FAMILY CODE

1994-1997

- In the period 1994-1997 the Engine Family Code underwent some changes. Characters 1-6 stayed the same as the previous period, however the remaining characters were changed.

ENGINE FAMILY CODE

1994-1997

- Character 1 The vehicles model year
- Characters 2&3 The engine manufacturer
- Characters 4,5&6 Engine displacement in cubic inches or liters
- Character 7 The vehicle class
- Character 8 The type of fuel metering and the number of valves per cylinder
- Character 9 The combustion cycle and fuel
- Character 10 The emission standards
- Character 11 The catalyst/trap
- Character 12 The on board diagnostics

SPECIAL NOTE 1

- The catalyst type specified by character 9 may be different from the catalyst type specified in AREA 3 on the label. The AREA 3 catalyst type ALWAYS supersedes the catalyst specified in the engine family code. In most cases, this will occur in light duty trucks.

SPECIAL NOTE 2

- One emission label may apply to a number of different engines in a particular engine family , for example, the Chrysler 2.2 and 2.5 or the GM 5.0 or 5.7.It is always best to read all four areas first when determining applicable emissions equipment.

Engine Family Code

Exercises

- Practice what you have just learned on the following examples:

- Example 1:

- H 2G 2 . 5 V 5 N BA X

1= 7=

2,3 = 8=

4, 5, 6= 9=

- Example 2:

- C FM 1 . 6 V 2 G KC 2

1= 7=

2,3 = 8=

4,5,6 = 9=

- Example 3:

- G NS 2 . 4 T 5 H DF 9

$$1 =$$

$$7 =$$

$$2,3 =$$

$$8 =$$

$$4,5,6 =$$

$$9 =$$

- Example 4:

- E TY 2 . 8 V 5 F BB 5

$$1 =$$

$$7 =$$

$$2,3 =$$

$$8 =$$

$$4,5,6 =$$

$$9 =$$

Tampering

Smoke

Gas Cap



Visual Inspection

Tampering

- Tampering Defined
 - Rendering Inoperative
 - Intentional Misadjustment
 - of any motor vehicle device or element of design intended to control exhaust emissions
 - NAC445B.452

Emission Test

1968-1980

- To have a passing emission test on vehicles 1968 – 1980, what areas of the emission test must pass?
 - Visible Smoke (idle & 2500)
 - Gas Cap
 - Tailpipe Standards

Emission Device Visual Inspection for an Emission Test

- 1981 through 1995 (upon 3rd reg.) motor vehicle will be **INSPECTED** for the following **EMISSION CONTROL DEVICES** if equipped from the manufacturer.
 - Catalytic Converter
 - Fuel Inlet Restrictor
 - Air Injection System
 - Exhaust Gas Recirculation System
 - Gas Cap(s)

- To have a passing emission test on light duty vehicles 1981 through 1995, what areas of the emission test must pass?
 - Standards
 - Tail Pipe
 - Visual Smoke
 - Idle & 2500
 - Crankcase & Tailpipe

- Tampering visually inspect the following emission devices if equipped from the manufacturer
 - Catalytic Converter
 - Fuel Inlet Restrictor
 - Air Injection System
 - Exhaust Gas Recirculation System
 - Gas Cap

Gas Cap

- 1968 through 1995 gasoline powered vehicles
 - Clark and Washoe Counties
- **MUST** be:
 - Properly fitting
 - **ALL** tanks that fuel that vehicle
 - Dual Tanks/Spare Tanks

- A vehicle that fails for **ONLY** a missing gas
 - May be registered with a failing emission test when the following conditions are met
 - An approved emission inspector
 - Signs
 - Dates
 - Writes his/her inspector Number
 - **ABOVE** the gas cap failure on the failed emissions test



NEVADA

RE-PRINT VEHICLE INSPECTION REPORT OVERALL INSPECTION RESULTS: FAILED



BAR CODED VIN:



VEHICLE INFORMATION

Year: 1996 Make: BUIC Plate No: 816NCW VIN: 2G4WB52K7T1486938	Cylinders: 06 Type: Passenger GVWR: N/A Fuel: Gasoline	County: Washoe ZIP: 89511 Odometer: 48683 Inspection Type: Initial Inspection
------------------------------------------------------------------------	-----------------------------------------------------------------	----------------------------------------------------------------------------------------

TAILPIPE RESULTS

VISIBLE SMOKE: PASS

	HC ppm			CO%			CO2	O2%	RPM
	<= Limit	Reading	Result	<= Limit	Reading	Result	Result	Result	Result
2500 ± 300	220	11	PASS	1.20	0.04	PASS	15.30	0.0	2652
Idle 775±425	220	85	PASS	1.20	0.15	PASS	15.20	0.2	716

9/24/2002

1000MV

Ben Tempel

TAMPER RESULTS

Air Inj. System	EGR System	Catalyst	Fuel Inlet Restrictor	Gas Cap
N/A	PASS	PASS	PASS	FAIL

TEST INFORMATION

Station No: WEA000 Analyzer No: W701 Inspector No: I0045503	Test Date: 02/19/02 Start Time: 10:05:56 AM End Time: 10:26:03 AM	DMV ID: 374396897938 VIR No: D217679
-------------------------------------------------------------------	-------------------------------------------------------------------------	-----------------------------------------

VIR Certification Fee:	\$ 05.00
Electronic Transmission Surcharge Fee:	\$ 02.06
Inspection Fee:	\$ 24.50
Total Fee:	\$ 31.56

This Emission Test Valid For Registration Purposes For 90 Days Upon Date Of Issuance.

Visible Smoke

- “Smoke” Any visible smoke from the tailpipe or crankcase of a motor vehicle during the emission test will cause a failure. (Steam from condensation does not cause a test failure)
 - A person shall **NOT** operate a motor vehicle in the State of Nevada powered by gasoline which omits smoke
 - NAC445B.449
 - NAC445B.576
 - NAC445B.580

- On 1968 and newer model year, smoke from:
 - Crankcase Blowby (Engine)
 - Tailpipe (exhaust system)
- **WILL** be checked at:
 - Idle (350rpm-1250rpm)
 - High Idle (2200rpm – 2800rpm)
- 1996 and newer model year OBD testing only requires the idle smoke test

- Vehicles that **FAIL** an emission test due to visible smoke from crankcase blowby or tailpipe **MUST BE**:
 - Repaired Regardless of cost
- Example:
 - Oil cap or PCV valve is missing, and blowby is present, the vehicle is repaired then retested
 - Leaky valve cover will not fail for visible smoke
 - Leaks that leak onto the hot exhaust and smoke is caused by that leak will not fail the emission test for visual smoke.

- Challenge test may be performed on a vehicle that fails for visible smoke
 - Customer needs a **FAILED** emission test before a challenge test can be performed

Waivers



WAIVER STATEMENT

- A waiver is a way for a person to register a vehicle with a failing emission test as long as they use the following procedure.
- A vehicle has failed the emission test for Hydrocarbons (HC), Carbon monoxide (CO), or both.
- A vehicle **will be eligible** for a waiver when the following steps are followed:

Clark County

- When applying for a waiver in Clark County a person must include:
- The first failed emission test
- 2G Shop repair receipts showing that a minimum of \$450 in repairs have been spent on labor and/or parts directly related to the deficiency in emissions of HC, CO, or both
- The repairs **MUST** be performed at a **State** of **Nevada** **AUTHORIZED TEST** and **REPAIR EMISSION STATION** (**2G**)

- The second failing emission test
- The customer needs to bring the **Vehicle** and all the following paper work to the Las Vegas Emissions Lab located at:

2701 East Sahara Avenue,
Las Vegas Nevada, 89104
(702) 486-4981

- 2 failed emission test for HC, CO or both
- Receipts from a 2G shop showing \$450 was spent

- All receipts for parts and labor repairs must be for the vehicle in question
 - Dated after first failed emission test
 - Parts must be installed on the vehicle in question
- Items that will not count towards the MONATARY minimum
 - Cost for failed emission tests
 - Tax on parts

WASHOE COUNTY

- A customer with a failed vehicle for HC, CO, or both in Washoe County has:
 - **2 CHOICES** for repairs
 - Shop Repairs
 - State of Nevada Authorized Test and Repair Emission Station (2G) Shop or:
 - Self Repairs

- When applying for a **SHOP REPAIRS** waiver in Washoe County a person must include:
- The first failed emission test
- Receipts from a 2G Shop showing that a minimum of \$200 in repairs have been spent on labor and/or parts directly related to the deficiency in emissions of HC, CO, or both
 - Shop repairs **MUST** be performed at a **State of Nevada AUTHORIZED TEST REPAIR EMISSION STATION (2G)** and

- The second failing emission test
- The customer needs to bring the **Vehicle** and all the following paper work to the Reno Emissions Lab located at:

305 Galletti Way,
Reno, Nevada, 89512
(775) 684-3580

- 2 failed emission test for HC, CO or both
- Receipts from a 2G shop showing \$200 was spent

- All receipts for parts and labor repairs must be for the vehicle in question
 - Dated after first failed emission test
 - Parts must be installed on the vehicle in question
- Items that will not count towards the MONATARY minimum
 - Cost for failed emission tests
 - Tax on parts

Self Repairs in Washoe County

- When applying for a **SELF REPAIR** waiver in Washoe County a person must include:
 - The first failed emission test
 - Receipts showing that a minimum of \$200 in repairs have been spent on parts directly related to the deficiency in emissions of HC, CO, or both
 - Parts must be installed
 - The second failed emission test

- The customer with the failing vehicle needs to bring the **Vehicle** and all the following paper work to the Reno Emissions Lab located at:

305 Galletti Way,
Reno, Nevada, 89512
(775) 684-3580

- 2 failed emission test for HC, CO or both
- Receipts showing \$200 was spent

- All receipts for parts must be for the vehicle in question
 - Dated after first failed emission test
 - Parts must be installed on the vehicle in question

- Items that **WILL NOT** count towards the MONATARY minimum
 - Cost for failed emission tests
 - Tax on parts,
 - Cost for labor on self repairs.

A Vehicle is **NOT** Eligible for a Waiver if:

- It was repaired at an automotive repair facility that is **NOT** a State of Nevada Authorized Test and Repair Emission Station (2G)

- The owner must include receipts from a State of Nevada Authorized Test and Repair Emission Station (2G) that the monetary minimum has been spent on parts directly related to the deficiency in HC, CO, or both
- **OTHER THAN:**
 - Catalytic Converter
 - Fuel Inlet Restrictor
 - Air Injection System
 - Exhaust Gas Recirculation System

- If it emits Visible Smoke
- If it fails for Tampering
- It is under manufacturer warranty.
- The repairs and/or parts installed in the vehicle were not directly related to the emission failure such as:
 - Brakes, tires, shocks, etc.
- The minimum repair expenditures were not met

- If you have any questions about an emission test or wish to apply for a waiver, contact the emission control lab in your area.
- Emission Control Labs:
 - Reno (775) 684-3580
 - Las Vegas (702) 486-4981

Closing Statement

Remember, You are the frontline Representative for Nevada's clean air program. It is vitally important that you are knowledgeable about the emission program, the emission test and results and the emission analyzer. It is especially important if you repair vehicle emission systems, your ability to diagnose and correct problems is crucial to Nevada's efforts to improve its air quality.

Glossary of Terms

- **Alphanumeric:**

Alphanumeric describes the OBD II trouble code numbering system.

i.e.: trouble code PO300

- **AIP:**

Air Injection Pump

- **AIR:**

Air Injection Reaction

- **AIS:**

Air Injection System

- **AIV:**

Air Injection Valve

- **CAL:**
California Certification
- **Catalyst:**
A catalyst is a device that promotes a chemical reaction without being consumed or changed by the chemical process
- **CARB:**
California Air Resources Board
- **CNG:**
Compressed Natural Gas
- **CO:**
Carbon Monoxide

- **CO2:**
Carbon Dioxide
- **DLC:**
Data Link Connector
- **DTC:**
Diagnostic Trouble Code
- **ECT:**
Engine Coolant Temperature Sensor
- **EGR:**
Exhaust Gas Recirculation

- **EPA:**
Environmental Protection Agency
- **EVAP:**
The evaporative emission system
- **FED:**
Federal Certification
- **FR:**
Fuel Inlet Restrictor
- **FREEZE FRAME:**
A single snapshot of critical operating conditions stored in the PCM.

- **FTP:**
Federal Test Protocol
- **GVWR:**
Gross Vehicle Weight Rating
- **HC:**
Hydrocarbon
- **IAC:**
Idle Air Control
- **IAT:**
Intake Air Temperature
- **I/M:**
Inspection and Maintenance

- **KOEO:**
Key ON Engine Off
- **KOER:**
Key On Engine Running
- **LPG:**
Liquefied Petroleum Gas
- **MAF:**
Mass Air Flow sensor
- **MAP:**
Manifold Absolute Pressure

- **MIL:**
Malfunction Indicator Lamp
- **Misfire:**
Anything that causes incomplete combustion
- **Monitor:** A test performed by the on board diagnostic system to check the performance of various components and subsystems
- **OBD I:**
OBD I is an abbreviation for On-Board Diagnostics, Generation One

- **OBD II:**

OBD II is an abbreviation for On-Board Diagnostics, Generation Two

- **OC:**

Oxidation Catalyst

- **ORC:**

Oxidation Reduction Catalyst

- **O2S:**

Oxygen Sensor

- **PCM:**

Powertrain Control Module

- **PPM:**

Parts Per Million

- **Readiness Status:**

Also referred to as System Status, this is a list of monitors displayed on a scan tool telling us whether various monitors have run to completion. It does indicate if the monitor passed or failed, only if it ran completely

- **TP (or TPS):**

Throttle Position Sensor

- **Trip:**

A key cycle (Key-On, start to-run, and Key-OFF) where driving conditions enable a monitor to run.

- **TWC:**

Three Way Catalyst

- **Type-A:** A system fault that stores a DTC and Freeze Frame and turns on the MIL in a single trip.

- **Type-B:** A system fault that uses Two-Trip logic to store a DTC and Freeze Frame and turn on the MIL.

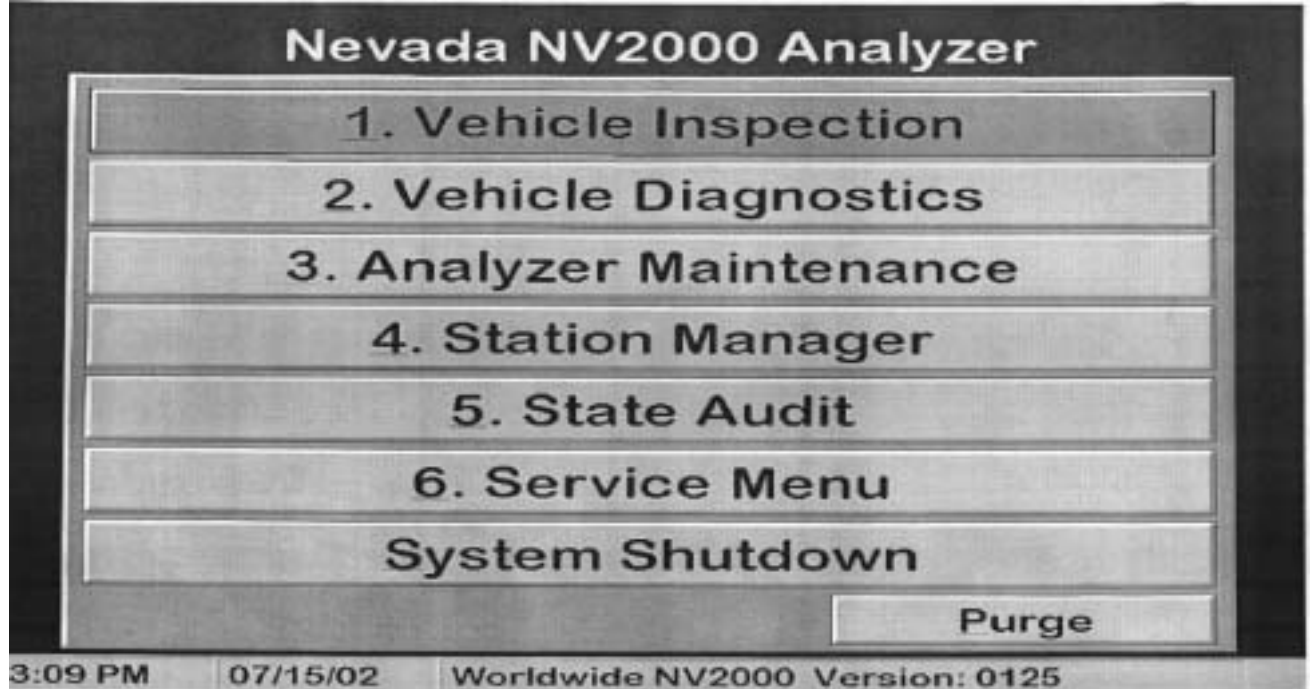
- **VIR:**
Vehicle Inspection Report
- **VSS:**
Vehicle Speed Sensor
- **WOT:**
Wide Open Throttle
- **Warm-up Cycle:**
Warm up cycles are used by the PCM to erase DTCs after the (MIL) is extinguished by the PCM.

NEVADA

EMISSION TESTING

PROCEDURES





- Prior to starting the Nevada I/M emission test you must:
- Ask why the vehicle emission test is needed.
- Ask in what County, City & ZIP code the vehicle is located.
- Verbally verify that the vehicle is properly warmed up. (Driven at least 10 miles or 15 minutes)
- If the vehicle requires an emission inspection and the customer requests an inspection the vehicle must be tested as received
- Remember only vehicles in Clark & Washoe Counties require an emissions test.

NEVADA

Department of Motor Vehicles and Public Safety Compliance Enforcement Division Engine Swap Approval

VEHICLE

Year: Make: Model: VIN:

ENGINE

Serial or Casting #: Make: Displacement: Config./Cylinders:

REQUIRED EMISSION DEVICES

Air Injection: EGR: Catalyst: Fuel Inlet Restrictor:

INSPECTOR'S NOTE:

This form provides information needed to perform the tampering portion of a Nevada Emission Inspection on vehicles with an approved engine swap. If the emission devices selected above are not installed or do not appear operational during an emission inspection, evidence of compliance should not be issued.

STATE TECHNICIAN:

The above mentioned vehicle and engine combination has been inspected and all emission devices that are required by the new engine configuration, specific to the vehicle's model year or newer, are installed and appear to be functioning.

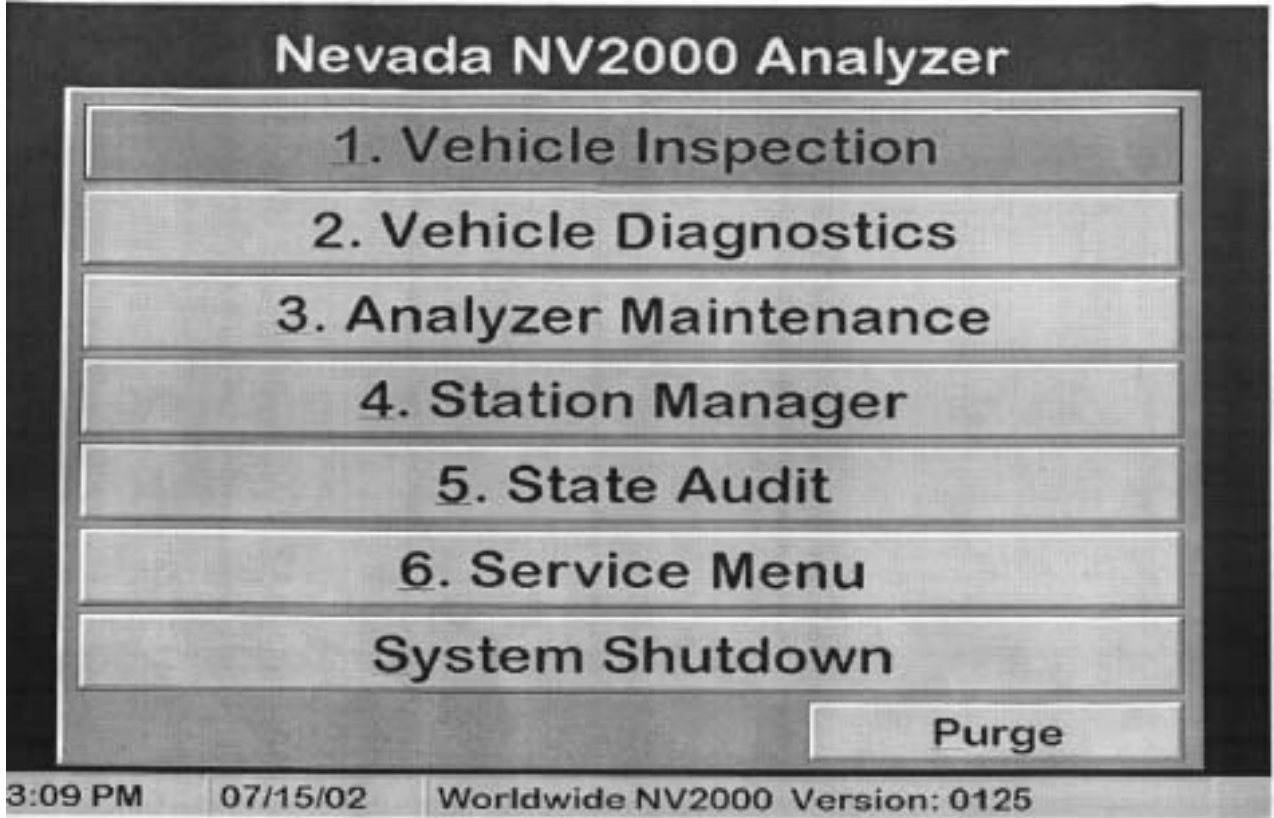
Technician:

Signature: _____

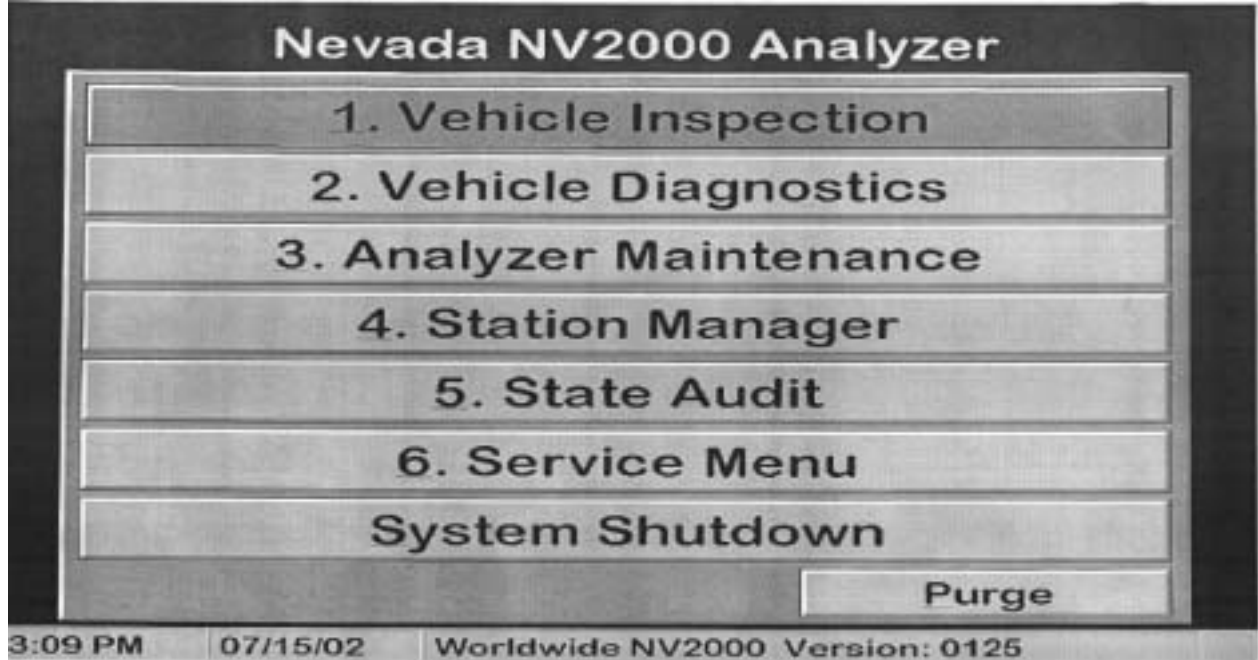
County:

Date:

- This is an engine swap form. When a customer requests an emission test and presents you with this form you will test the vehicle using the information on the form.
- If you have any questions regarding this form call your local Emission Lab.



- It is the EMISSIONS INSPECTORS RESPONSIBILITY to make sure the vehicle requires an emissions test.
- A customer who's vehicle did not require an emission test, but was tested anyway, will be entitled to a complete refund for all certificate fees, electronic transmission fees & labor fees that may have been charged.(NAC 445B.586)



- THE MAIN MENU SCREEN
- This screen is the starting point for both the 1995 and older tailpipe test (also includes 1996 and newer heavy duty vehicles) and the 1996 and newer light duty OBDII test. To enter the test mode click on the vehicle inspection box.
- Remember to double click or push enter on the highlighted box to confirm your entry.
- The box should change color indicating your entry has been accepted.

Vehicle Inspection Menu Nevada NV2000 Analyzer

1. Emission Inspection

2. Reprint Vehicle Inspection Report

3. Training Mode

4. RPM Pickup Screen

5. Vehicle Registration

Return to Main Menu

3:10 PM

07/15/02

Worldwide NV2000 Version: 0125

- Follow the emission analyzers screen prompts to the letter!
- This will ensure that the proper State prescribed emission test procedure will be followed.
- **An inspector must!**
- Test the vehicle in the condition in which it was received. **No exceptions!**
- **DO NOT PRETEST!**
- Perform the complete test from start to finish.

Vehicle Inspection Menu Nevada NV2000 Analyzer

1. Emission Inspection

2. Reprint Vehicle Inspection Report

3. Training Mode

4. RPM Pickup Screen

5. Vehicle Registration

Return to Main Menu

3:10 PM

07/15/02

Worldwide NV2000 Version: 0125

- To enter the emission inspection mode click on Emission Inspection.



- Now enter your Inspector license number. Remember your Inspector license number begins with an I not a 1.
- Enter zero's not o's.



- Now enter your five digit access code and click on ok.
- **Do not share your access code with anyone!**
- **Sharing your access code with anyone can result in a fine or a suspension! NAC 445B.489**

Scan the Bar Code on the Vehicle for the VIN. If Bar Code is NOT Available, Enter the VIN Manually.

1JTF2355JK7885467

8 AM 05/07/02 Worldwide NV2000 Version: 0125

- Next you may either scan the VIN. Number or enter it manually. Remember if you use the scanner you must check your entry for errors!
- A VIN error will create an invalid VIR.

- A customer with an invalid VIR cannot renew his or her registration.
- Any inspection information or data entry error on the VIR will require that the inspector retest the vehicle at no charge to the customer.
- Do not inconvenience a customer by sending them to the DMV with a invalid VIR! We will **NOT** sign it off.



- This screen is your last chance to make changes in your VIN Entry! Now is the time to verify your entry. Recheck the VIN at the vehicle. (Do not use the VIN you have written on your note pad) If it is not correct click on the NO box and re-enter. If it is correct click on the YES box and continue.

Please verify that the following information is correct and accurate:

vin:

1JTF2355JK7885467

ATTENTION: The test will be aborted if the VIN number is not correct.

IS THIS INFORMATION CORRECT?

YES

NO

10:42 AM

05/07/02

Worldwide NV2000 Version: 0125

- Remember if the VIN is entered manually it must be entered twice to verify and confirm the entry.
- If the VIN. Is scanned, the analyzer will require only one entry, however it must be manually verified to check for scan accuracy.

Performing Network Communications.

12:56:25 2100; Previous Call Message Accepted.
12:56:26 2999; Logging Off
12:56:26 1000; Carrier lost.
12:56:28 1099; Hanging Up.
12:56:43 9999; Request Process Completed
12:56:43 9999; Communication Session Complete

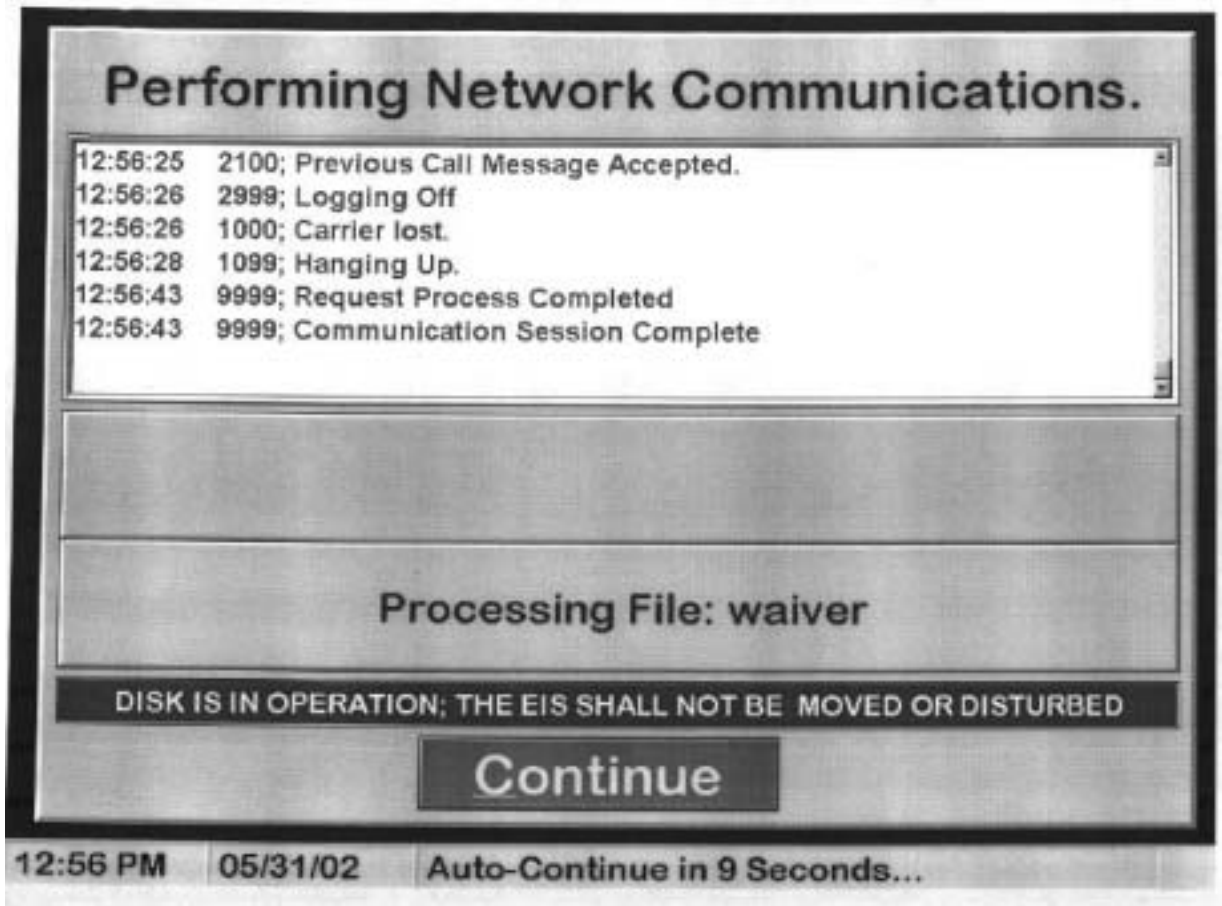
Processing File: waiver

DISK IS IN OPERATION; THE EIS SHALL NOT BE MOVED OR DISTURBED

Continue

12:56 PM 05/31/02 Auto-Continue in 9 Seconds...

- The analyzer will now begin communicating with the **Vehicle Information Database(VID)**.
- **Do not** move the analyzer while the disk is in operation!



- The analyzer will advise that the communication session has been completed.
- **Do Not** move the analyzer while the disk is in operation!



- This screen gives the technician the chance to read recall information on the vehicle.

Vehicle Inspection Menu Nevada NV2000 Analyzer



- NEW STATE MESSAGES
- This screen is used to provide information related to the emission program. This information should be reviewed at least once a day and printed as needed.
- Once read or printed this screen should not appear again for the same inspector.

Vehicle Inspection Menu Nevada NV2000 Analyzer



- When “ The Vehicle Does Not Match “ screen comes up the technician must advise the customer that he or she will not be able to renew by telephone or by internet.
- The customer must renew by mail or in person at a DMV office.
- The Vehicle Information Database (VID) does not recognize the vehicle.

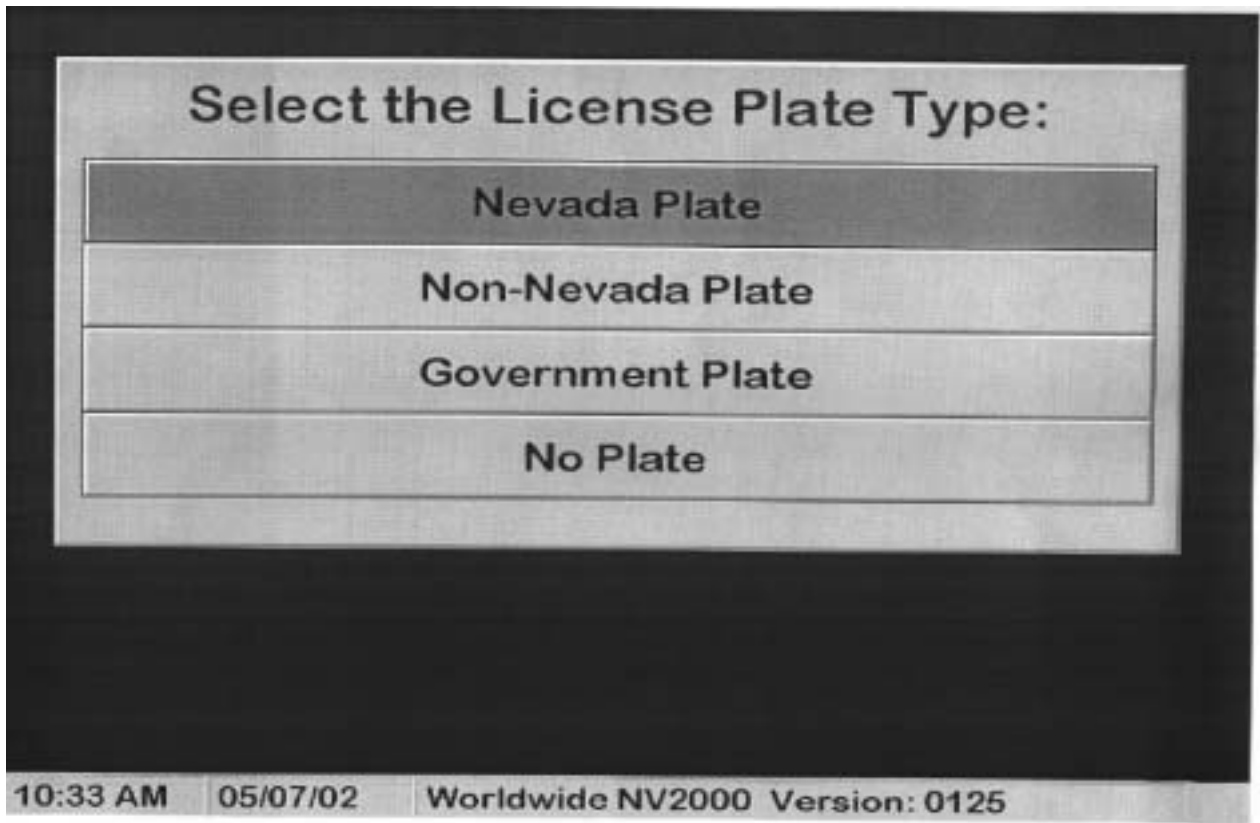
Vehicle Inspection Menu Nevada NV2000 Analyzer



- This mismatch problem can be eliminated if all technicians verify that the information they enter is up to date and correct on every emissions test. **DO NOT:**
 - Enter o's in place of zeros.
 - Enter spaces.
 - Enter incorrect VIN numbers
 - Enter incorrect license plate numbers.



- This screen is a result of the VID not recognizing the vehicle.
- The license plate must be entered manually.



- ENTER PLATE TYPE
- All plates that say NEVADA on top are NEVADA plates! (EX38380 is a Nevada plate)
- Any other Country or State license plate is a Non-Nevada license plate.
- Only plates that say US GOVERNMENT are Government license plates.
- Walk behind the vehicle and verify no plate is present
- If the vehicle has no plates, click on the “No Plate” box.

Enter the Nevada License Number
of the Vehicle:

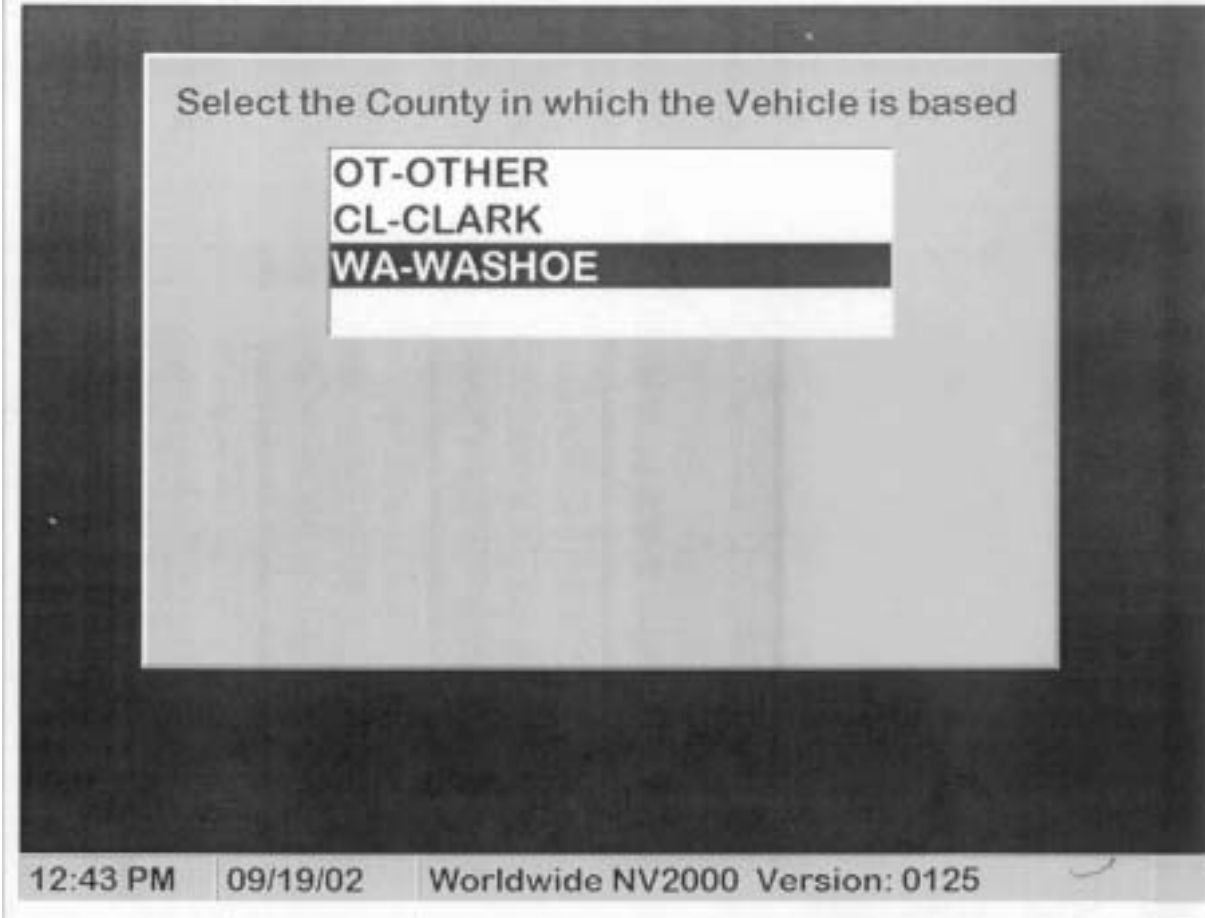
W24425

10:34 AM 05/07/02 Worldwide NV2000 Version: 0125

- Enter the plate exactly as seen.
- Run all numbers and letters together.
- Do not enter any spaces.
- An example would be EX38380 not EX 38380 or ABC123 would be correct not ABC 123.
- Do not try to enter any dots stars or any other symbols.



- This is your last chance to verify you have entered the correct license plate number and type.
- If you have made an error click on no and re-enter the correct information.
- If everything is correct click on yes and continue with the test.
- Remember any incorrect entry creates a invalid VIR and the test will have to be done over again at no charge to the customer.



- Enter the correct county.
- Ask for the name of the city the vehicle will be located in to help ensure the vehicle requires a test
- Enter other if:
- The vehicle has out of state plates and the customer has no local legal address.
- The customer has requested a test for a vehicle that is in an exempt area.

Select the County in which the Vehicle is based

OT-OTHER
CL-CLARK
WA-WASHOE

Select the Zip Code where the Vehicle is based

89494
89501
89502
89503

IS THIS INFORMATION CORRECT?

YES NO

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- ENTER COUNTY & ZIP CODE
- ONLY CLARK AND WASHOE COUNTIES REQUIRE EMISSION TESTING!
- Be aware there are exempt areas within Clark & Washoe Counties.
- It is the inspectors responsibility to verify that the County, City, Zip Code and model year require an emissions test!
- If a ZIP code is not shown in your analyzer something is wrong. Be sure the vehicle requires a test.

The screenshot shows a software interface for entering vehicle information. The fields are organized as follows:

- Model Year:** A text box containing "2000".
- Vehicle Type:** A dropdown menu with "P-PASSENGER" selected. Other options visible are "T-TRUCK" and "M-MOTORHOME/BUS".
- GVWR:** A text box containing "N/A".
- Vehicle Make:** A dropdown menu with "AC" selected. Other options visible are "ACUR", "AGEN", "ALFA", "AMC", and "AMER".
- No. of Cylinders:** A dropdown menu with "4" selected. Other options visible are "1", "2", and "3".
- Fuel Type:** A dropdown menu with "G-Gasoline" selected.
- Ignition:** A dropdown menu with "C-Conventional" selected.
- Dual Exhaust:** A dropdown menu with "YES" selected. "NO" is also visible.

Below the input fields is a confirmation section:

IS THIS INFORMATION CORRECT?

YES NO

At the bottom of the screen is a status bar with the following text:

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- Correctly enter the model year of the vehicle. This can be determined by reading the under hood label or by matching the tenth digit of the vehicle identification number with a model year chart.
- The tenth digit model year method does not apply to 1979 and older vehicles.

Vehicle Year Identification

(for general reference, not a complete list)

81 AND NEWER ALL MAKES AND MODELS

- All 1981 and newer vehicles have **17 DIGITS** in the **VIN #** (Vehicle identification number).
- The **10th DIGIT** from the left indicates the year of the vehicle.

A	B	C	D	E	F	G	H	J	K
80	81	82	83	84	85	86	87	88	89

L	M	N	P	R	S	T	V	W	X
90	91	92	93	94	95	96	97	98	99

Example: A Dodge with the VIN #
1B3BD59D8 C F123824

The 10th digit is a **C** that indicates a 1982 model year.

1. The letters **I, O, Q** and **U** **ARE NOT** used to indicate the year on 1981 and newer vehicles.
2. On 1980 model vehicles the VIN number will not be 17 digits, but some manufacturers have used the letter **A** in their VIN number to indicate a 1980 model year vehicle.

1968 to 1980 cont.

Chrysler: The 6th digit indicates the year model.

Example: (79 Chrysler)

SS22K **9** R135877

Note: Chrysler used the letter **A** for the model year 1980.

VW/AUDI: The 3rd digit indicates the model year.

Example: (79 VW) 17 **9** 3763106

Note: Audi and VW used the letter **A** for the model year 1980.

1968 to 1980

FORD/LINCOLN/MERCURY: First number indicates the year model on cars (**NOT TRUCKS**).

Example: (79 Ford) **9** U76H118566

Note: In 1980 Ford used the digit **0** to indicate the model year.

GM: 6th digit indicates the year model.

Example: (79 Chevy) 1L35G **9** S123860

Note: In 1980 GM used the letter **A** to indicate the model year.

AMC: The second digit indicates the year model.

Example: (79 AMC) A **9** C437C203980

Note: AMC used a **0** for the model year 1980

Vehicle Model Year for All Vehicles

(VIN position 10)

The model year is designated as follows:

<u>Year</u>	<u>VIN Code</u>
1980.....	A
1981.....	B
1982.....	C
1983.....	D
1984.....	E
1985.....	F
1986.....	G
1987.....	H
1988.....	J
1989.....	K
1990.....	L
1991.....	M
1992.....	N
1993.....	P
1994.....	R

Vehicle Model Year continued

<u>Year</u>	<u>VIN Code</u>
1995.....	S
1996.....	T
1997.....	V
1998.....	W
1999.....	X
2000.....	Y
2001.....	1
2002.....	2
2003.....	3
2004.....	4
2005.....	5
2006.....	6
2007.....	7
2008.....	8
2009.....	9
2010.....	A
2011.....	B
2012.....	C

Model Year 2000	Vehicle Type P-PASSENGER T-TRUCK M-MOTORHOME/BUS	GVWR N/A	Vehicle Make AC ACUR AGEN ALFA AMC AMER
No. of Cylinders 1 2 3 4	Fuel Type G-Gasoline	Ignition C-Conventional	Dual Exhaust YES NO

IS THIS INFORMATION CORRECT?

YES NO

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- Correctly enter:
- P = For passenger vehicles (15 passengers or less)
- T = Truck (Any vehicle designed for the transportation of property)
- M = Motorhome or bus (16 passengers or more or a vehicle designed for recreation)
- M = Chassis mounted camper
- Correctly enter the gross vehicle weight rating if the vehicle is a truck.
- This can normally be found on the drivers door post. Be sure to use the GVWR and not the gross axle weight rating.

FORD 1FTSX31L9XEF11444

MFG Date 09/07/99

2650 FRONT GAWR

9800 GVWR

5150 REAR GAWR

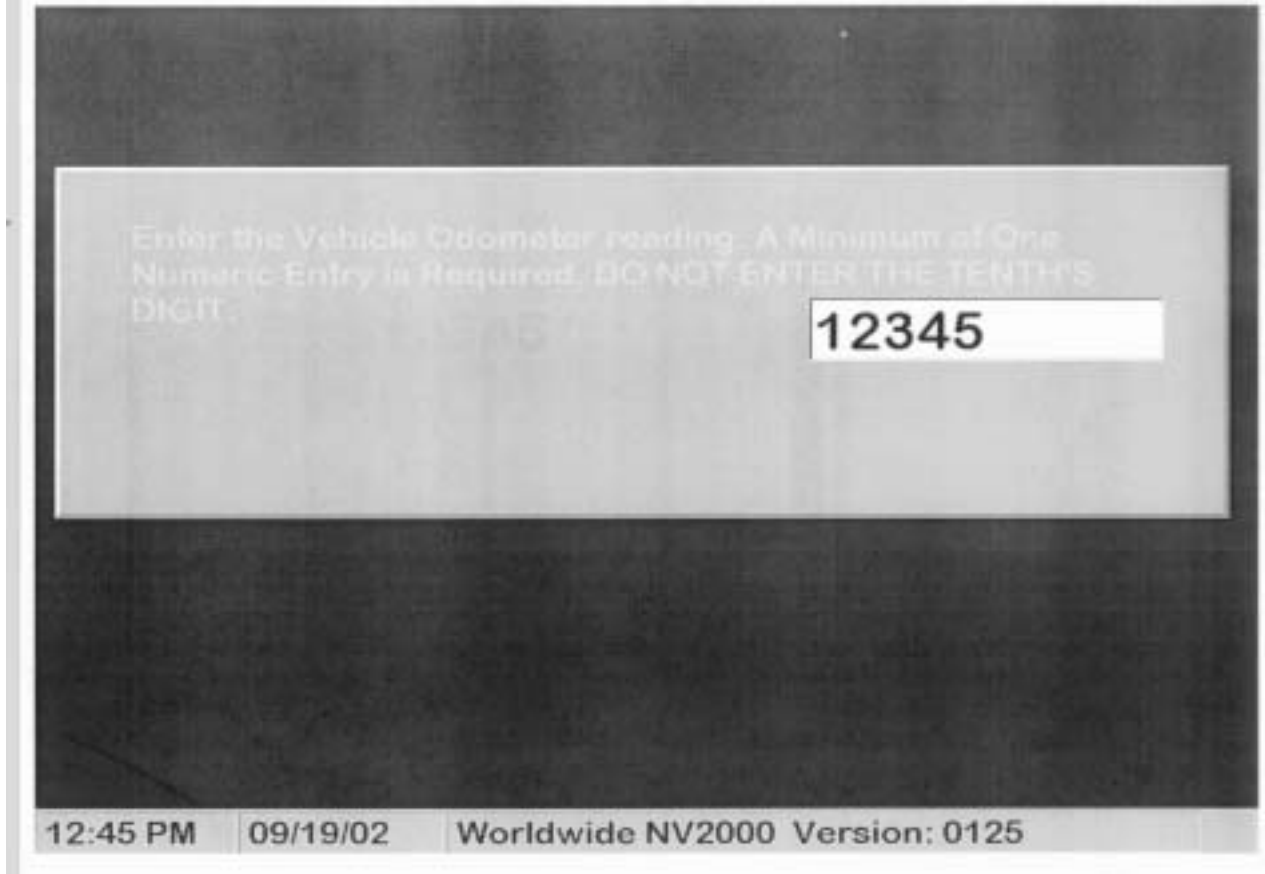
This vehicle conforms to all applicable Federal Motor Vehicle Safety Standards in effect on the date of Manufacture shown above

- Remember when you read a Gross Vehicle Weight Rating sticker do not use the Gross Axle Weight Rating!
- Using the Gross Axle Weight Rating may cause the vehicle to be tested at an incorrect standard.
- An example would be a Ford F350 that fails an emission test and the GVWR on the VIR is 3500 lbs. Was this a correct GVWR or was this a GAWR?

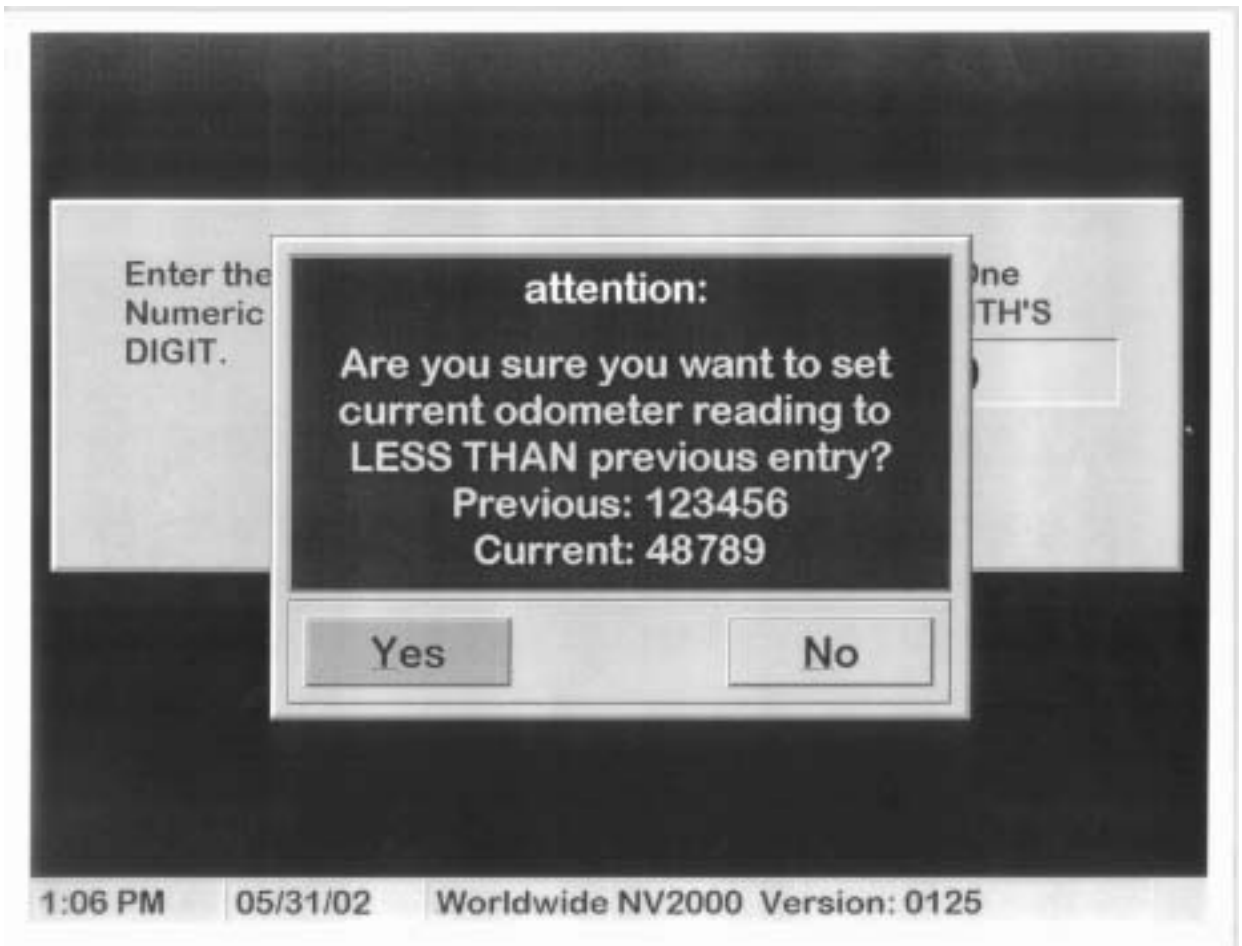
- When entering the Gross Vehicle Weight Rating:
 - **DO NOT** use the registration
 - Call the Emissions Lab if needed.

Model Year 2000	Vehicle Type P-PASSENGER T-TRUCK M-MOTORHOME/BUS	GVWR N/A	Vehicle Make AC ACUR AGEN ALFA AMC AMER
No. of Cylinders 1 2 3 4	Fuel Type G-Gasoline	Ignition C-Conventional	Dual Exhaust YES NO
IS THIS INFORMATION CORRECT? YES NO			
11:31 AM 05/07/02 Worldwide NV2000 Version: 0125			

- Correctly enter the vehicle make.
(DODGE, CHEV, HONDA)
- Correctly enter the number of cylinders.
- Correctly enter fuel type: Gasoline, Alcohol, Natural Gas, Propane, Hydrogen or Dual Fuel. (This is a scroll screen display)
- Correctly enter the ignition type:
- Conventional, Distributorless or Quad four.
- Correctly enter exhaust type:
- Single or Dual



- Enter the odometer reading exactly as you see it. Do not enter tenths.
- Do not enter spaces or O's.
- If the odometer is blank enter 1.
 - Example: A LCD display that is not functioning and only displays a blank screen.



- This screen appears if you have entered an odometer reading that is lower than the previous entry.
- If you verify your entry is correct click on Yes.
- If you have made an error, click on No and enter the correct information.

Enter the Vehicle Odometer reading. A Minimum of One Numeric Entry is Required. DO NOT ENTER THE TENTH'S DIGIT.

12345

IS THIS INFORMATION CORRECT?

YES NO

11:33 AM 05/07/02 Worldwide NV2000 Version: 0125

- Confirm that the entry is correct.
- Remember no spaces or o,s.
- If all is correct click on Yes.
- If incorrect click on No and re-enter.

At this point the common portion of the test ends.

- If your vehicle is a 1968 to 1995 you will now enter the two speed idle test or tail pipe test.
- If your vehicle is a light duty 1996 to current you will now enter the OBD-II testing mode.
- If your vehicle is a 1996 to current heavy duty it will still be tested using the two speed idle test method.

TWO SPEED IDLE TEST-
GASOLINE POWERED LIGHT
DUTY VEHICLES
1968-1995 & 1968-CURRENT
HEAVY DUTY GASOLINE
POWERED VEHICLES



Before beginning the Emission Inspection portion of the test be aware of the following items:

The vehicle **MUST** be tested in the condition in which it was received.

Conduct the Test with **ALL** accessories turned **OFF** and with the wheels properly chocked.

Keep the engine running at **NORMAL OPERATING TEMPERATURE** (Use the temperature gauge reading **OR** a touch test on the radiator hose **AND** visual observation for overheating).

Continue

3:06 PM

07/19/02

Worldwide NV2000 Version: 0125

- **VERY IMPORTANT !!!**
- **CHOCK WHEELS!**
- Do not use throttle rods! (Due to safety)
- The vehicle must be tested as received. No exceptions!
- Turn off all accessories.
- Verify that the engine is at normal operating temperature.



- Fully insert probe in tailpipe.
 - Make sure probe will not fall out during test.
 - Install needle probe if needed.
- (If a screen is installed in a tailpipe)
- Note: A vehicle can be tested with a damaged exhaust system as long as the probe will not fall out.
 - No dilution problem is indicated
 - No safety problem exists.

IDLE (350-1250): VERIFIED		Verify that RPM remains stable at idle and high (if applicable) prior to exiting pickup screen and beginning emission test.	
HIGH (2200-2800): NOT Verified			
Number of Cylinders <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 8 <input type="radio"/> 10 <input type="radio"/> 12 <input type="radio"/> 16 <input type="radio"/> Rotary		Range: <input type="text"/>	Indicate Cycle <input type="radio"/> Four <input type="radio"/> Two <input type="radio"/> D. I. S. <input type="radio"/> Quad <input type="radio"/> Coil Over Plug
		Sensitivity: <input type="text"/>	
Select RPM Pick-Up Device <input type="radio"/> Contact <input type="radio"/> Direct <input type="radio"/> Non-Contact <input type="radio"/> OBDII		RPM Status <div style="background-color: black; color: white; padding: 10px; text-align: center;"> RPM Reading Is Stable. </div>	
<small>Non-Contact Requires Four Cycle Selection. Rotary Engines Requires D.I.S. Selection. Quad Needs Direct or Non-Contact Pick-Up.</small>		<div style="border: 1px solid black; padding: 5px; text-align: center;"> Continue </div>	
3:09 PM	07/19/02	Worldwide NV2000 Version: 0125	

- In this screen you must:
- Enter the number of cylinders.
- Select the correct ignition type.
- Choose the type of tachometer pick-up device being used.
- Verify low rpm tachometer signal.
- Verify high rpm tachometer signal.
- See your Tach Notes for help if needed.
- For additional help you can call the ²²³Emission Lab in your area.

IDLE (350-1250): VERIFIED

HIGH (2200-2800): NOT Verified

Verify that RPM remains stable at idle and high (if applicable) prior to exiting pickup screen and beginning emission test.

Number of Cylinders

☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6
☐ 8 ☐ 10 ☐ 12 ☐ 16
☐ Rotary

Range:

Sensitivity:

Indicate Cycle

☐ Four ☐ Two
☒ D. I. S. ☐ Quad
☐ Coil Over Plug

Select RPM Pick-Up Device

☐ Contact ☐ Direct
☐ Non-Contact ☐ OBDII

Non-Contact Requires Four Cycle Selection.
 Rotary Engines Requires D.I.S. Selection.
 Quad Needs Direct or Non-Contact Pick-Up.

RPM Status

RPM Reading Is Stable.

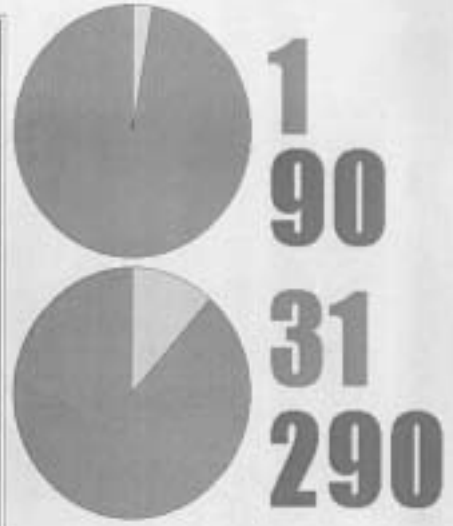
Continue

3:09 PM 07/19/02 Worldwide NV2000 Version: 0125

- When using the non-contact tachometer pick-up you must click on the four cycle setting.
- When using the OBDII pick-up be sure to click on the OBDII setting and follow the screen prompts.
- Be aware when using the contact setting you may need to change the cycle setting to bring the rpm into range.

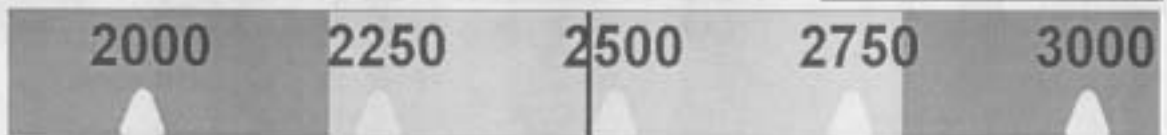
High Speed Mode

Maintain Vehicle Engine
RPM between 2200 and
2800.



Rpm: 2453

Change RPM Pickup

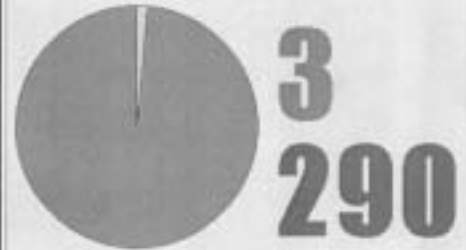


2:34 PM 09/19/02 Worldwide NV2000 Version: 0125

- Maintain engine speed between 2200 & 2800 rpm.
- If high rpm tachometer signal was not verified, watch for tachometer signal drop outs. Drop outs may cause a test failure.
- Be sure to verify both high and low rpm tachometer signals before entering test.

DILUTION Outside of Limits

**Dilution detected.
Please make sure the
probe is properly
inserted.**



Rpm: 703

Change RPM Pickup

250

500

750

1000

1250

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- The dilution warning indicates that the analyzer is not getting a sufficient exhaust sample.
- This can be caused by:
 - A leak in the exhaust system of the vehicle.
 - A damaged test hose or probe.
 - A probe or probes that fell out of the exhaust pipe.

High Speed Mode

Test is **COMPLETE**.
Remove Sample Hose
and Wait for Timer to
Finish.



Rpm: 730

Change RPM Pickup

250

500

750

1000

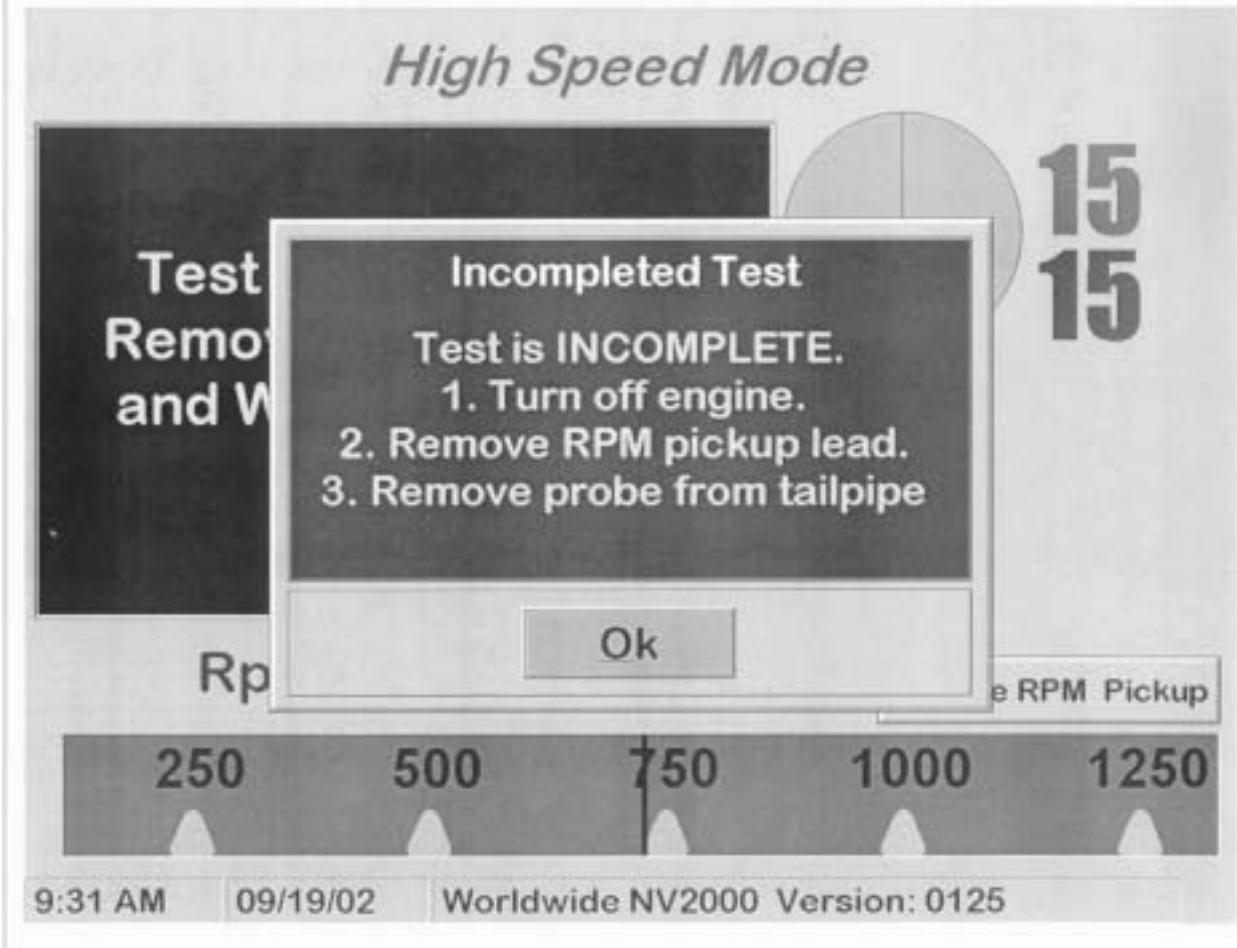
1250

9:31 AM

09/19/02

Worldwide NV2000 Version: 0125

- After failing for dilution the analyzer will advise you to remove the sample hose and wait for the timer to count down.



- If the dilution problem is present at the beginning of the test and the problem cannot be repaired the analyzer will time out. This will be indicated by the Incomplete Test screen.
- The problem must be repaired and the vehicle retested.

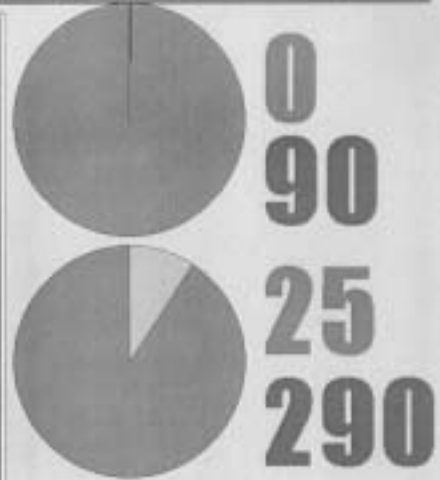
Vehicle Inspection Menu Nevada NV2000 Analyzer



- Remember an incomplete test is not a failure.
- The vehicle may need to be repaired and retested or:
- The analyzer may need to be repaired.

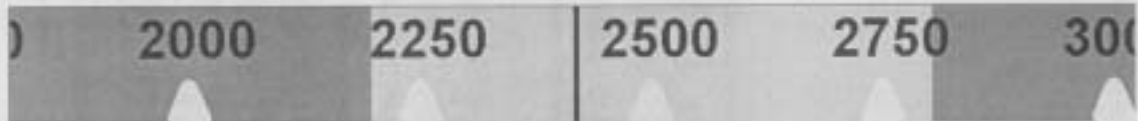
DILUTION Outside of Limits

Dilution detected.
Please make sure the
probe is properly
inserted.



Rpm: 2418

Change RPM Pickup

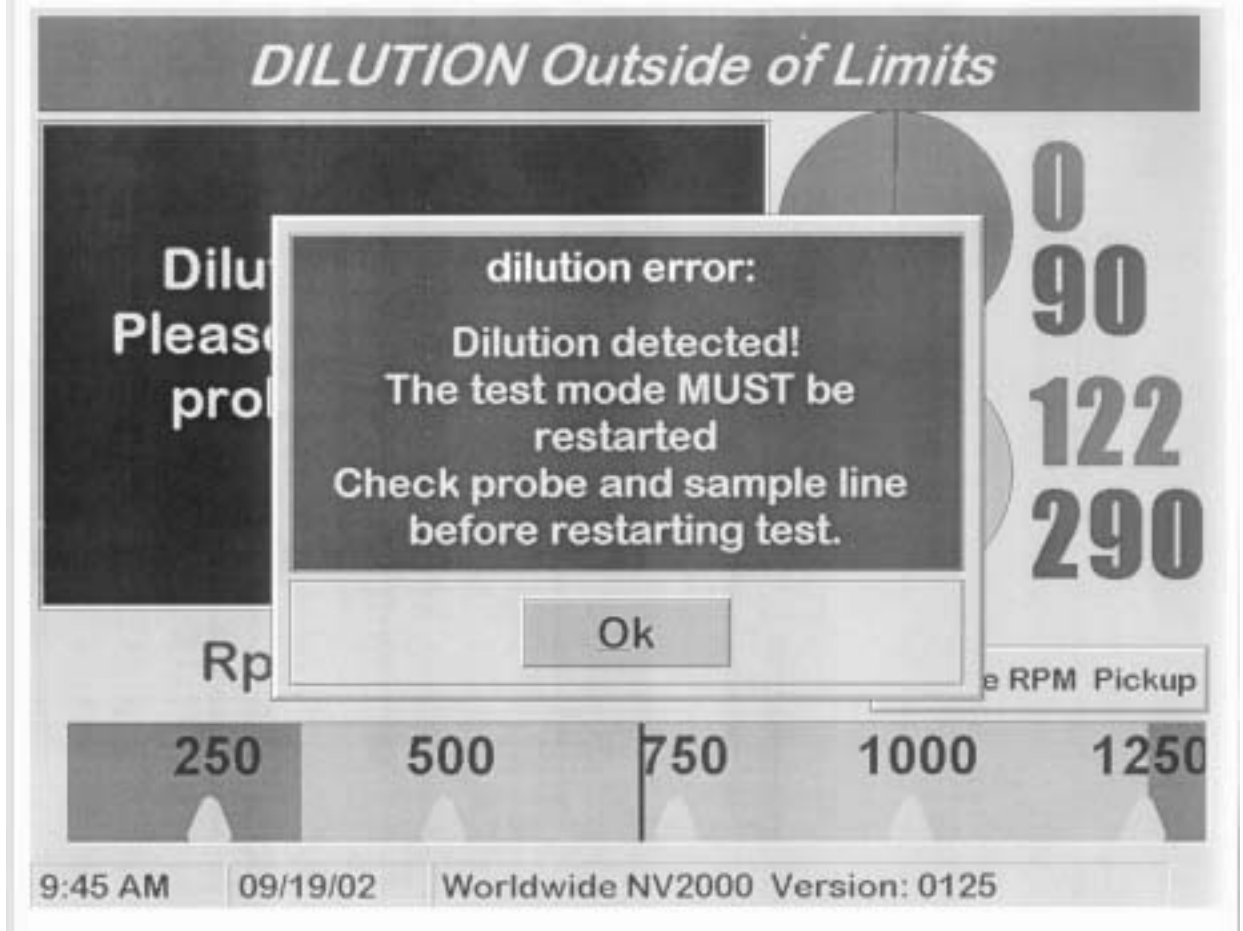


9:39 AM

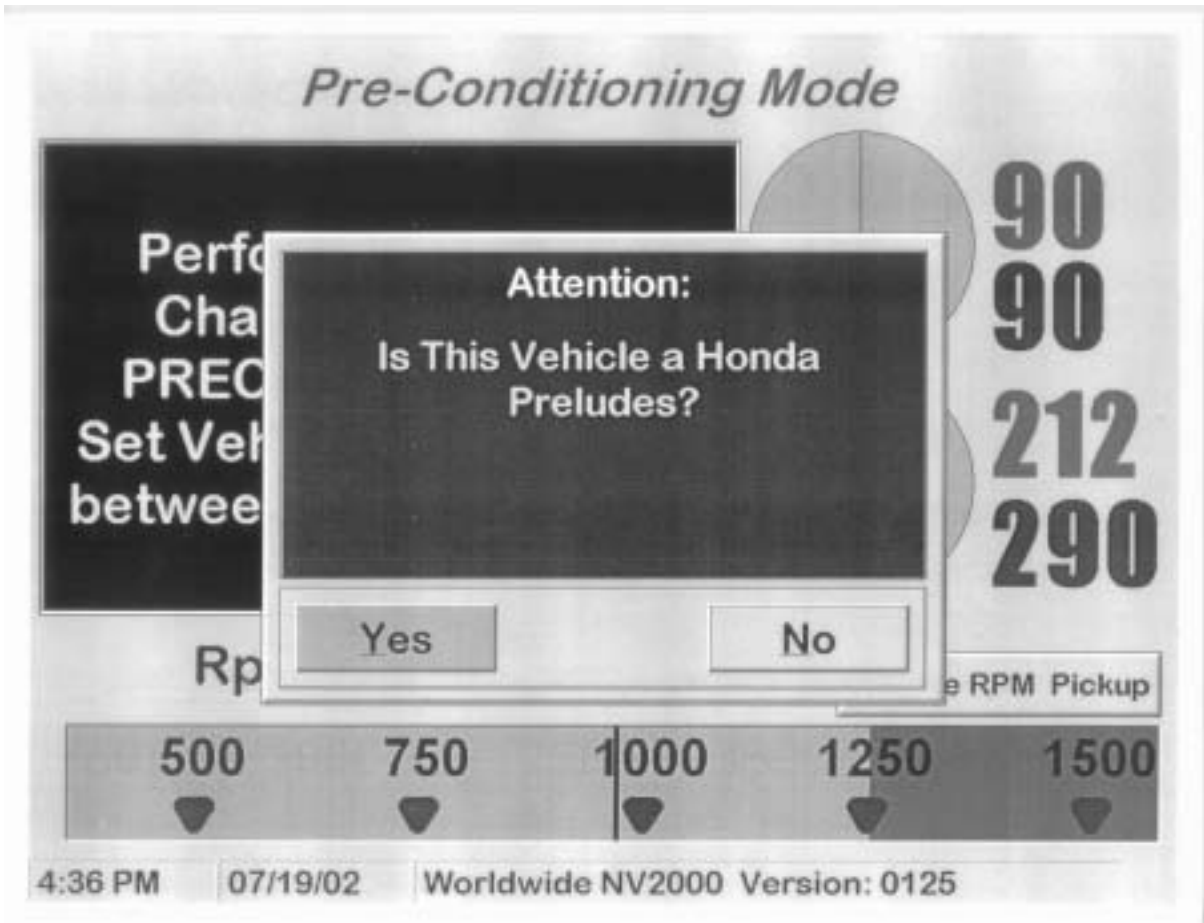
09/19/02

Worldwide NV2000 Version: 0125

- When dilution is detected after the test has begun the analyzer will prompt you to check that the probe is inserted properly.
- If the probe is inserted correctly the analyzer will halt the test until the problem is repaired.



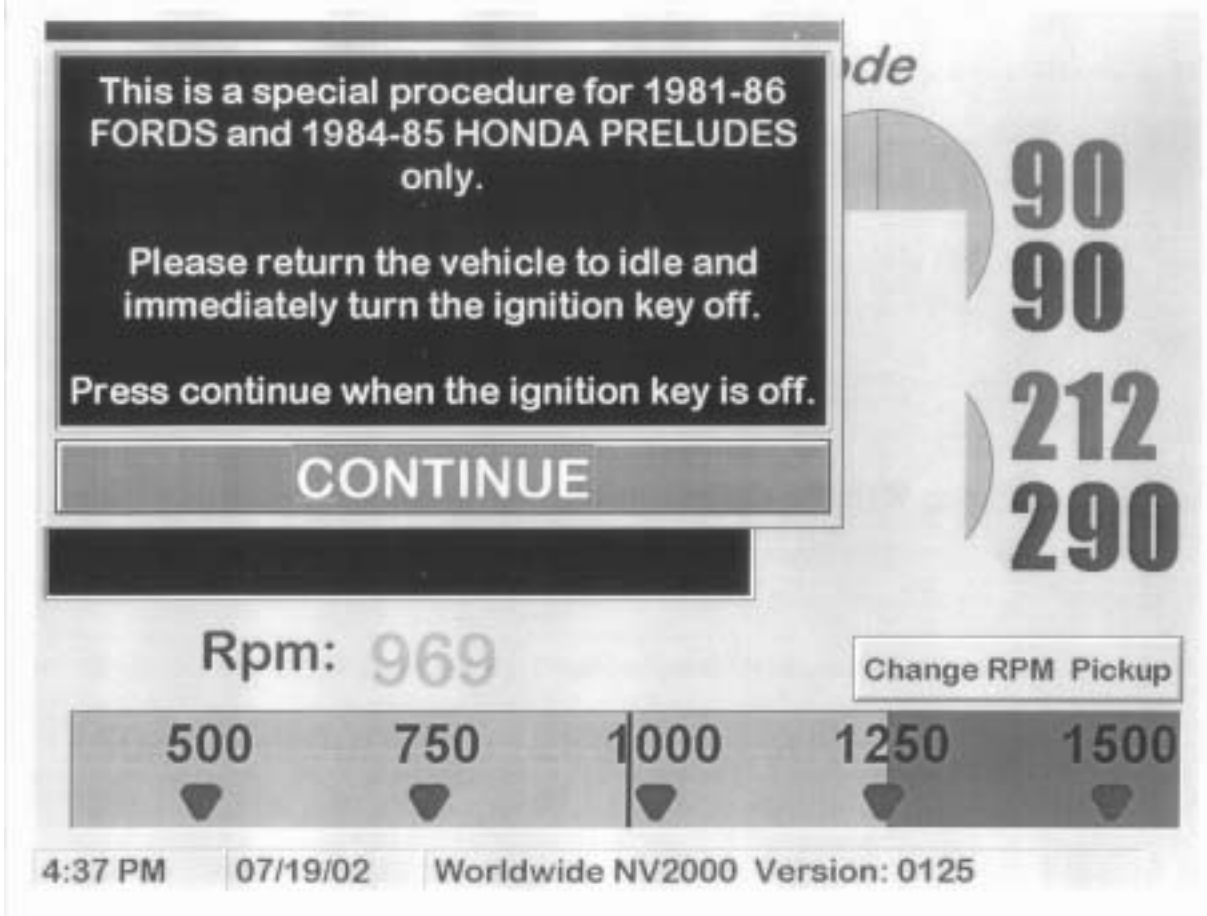
- If the problem cannot be repaired, the test can only be stopped by aborting the test.
- This is the only reason you can abort unless a safety issue is involved.



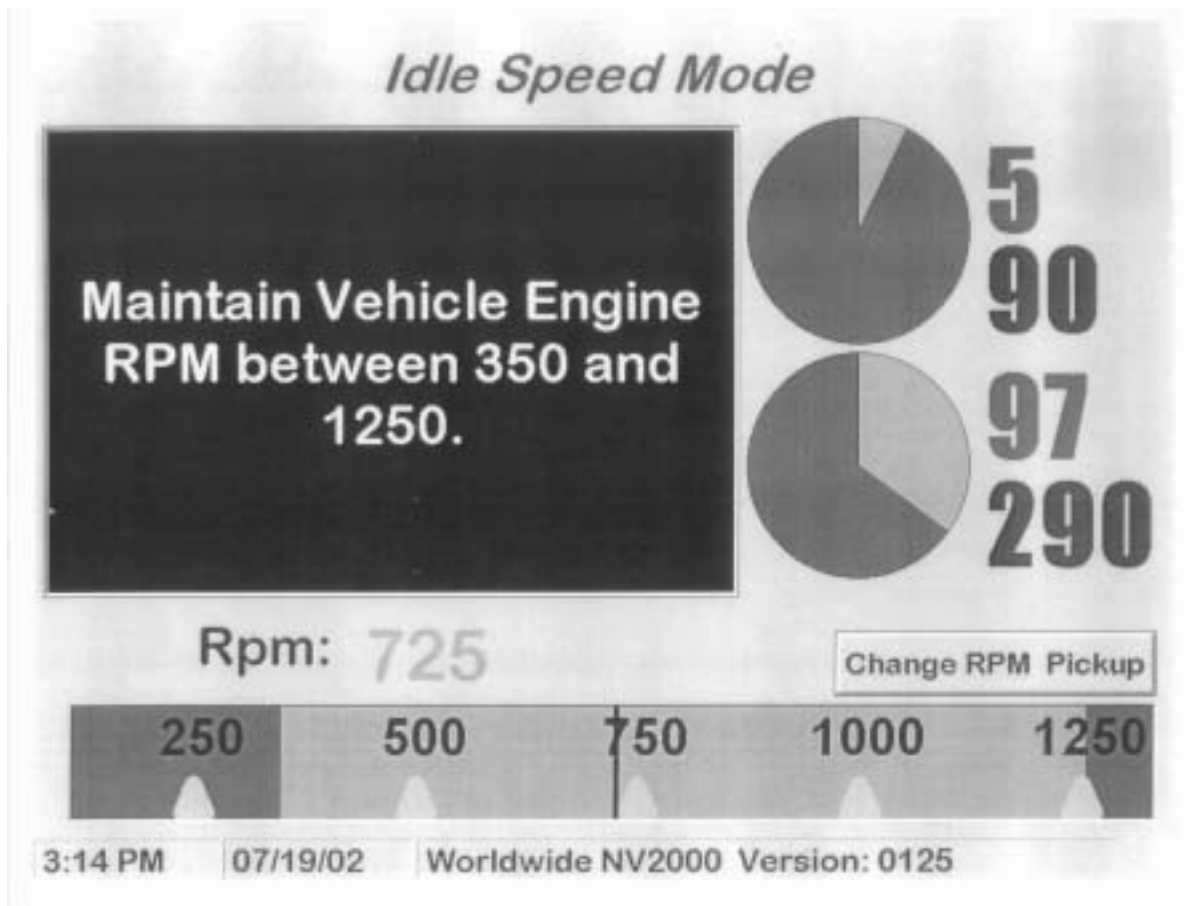
This screen appears after certain vehicles fail an emission test.

It indicates that the vehicle has special test requirements.

You must follow the screen prompts carefully.



- This only applies to 1981- 1986 Fords & 1984-1985 Honda Preludes.
- If the vehicle you are testing matches the special conditions click on Yes and follow the screen prompts.
- If not click on No and continue.



- Make sure the vehicle is idling between 350 rpm & 1250 rpm.
- Be sure the tachometer signal is stable.
- During this portion of the test be sure to check for visible smoke.
- Check for smoke coming from the tailpipe and the engine area.
- Only smoke coming from the tailpipe or the crankcase will cause a failure.
- Smoke from an oil leak does not count as a failure.



- The test is now complete.
- Turn off the engine.
- Remove test probe.
- Disconnect tachometer pick-up.
- Close the contact pick-up to prevent damage. Dropping the pick-up with the contact open may cause a broken ferrite magnet. A broken magnet may cause an erratic tachometer signal.
- Remove the wheel chocks.

VISIBLE SMOKE / TAMPERING

Is Visible Smoke Being Emitted From the Vehicle?

☒ N

TAMPERING CHECKLIST

1. Air Injection System

☒ N

Source:

☐

2. EGR System

☐

Source:

☐

3. Catalyst

☐

Source:

☐

4. Fuel Inlet Restrictor

☐

Source:

☐

5. Gas Cap

☐

Please Select the Source Codes From the Following List:

1 - MFG EMISSION DECAL, 2 - MANUAL, 3 - OTHER

9:57 AM

10/07/02

- If the vehicle is smoking click yes.
- Yes will cause a test failure.
- If the vehicle is not smoking click no.
- Next enter pass, fail or N/A for each tamper device listed.
- If you enter N/A be sure to enter the source of your information.
- 1 – Manufacturers emission decal
- 2 – Reference manual
- 3 – Other (Electronic media for example)
- Note: You do not have to enter a source if ₃₆ you enter Pass or Fail for a device.

VISIBLE SMOKE / TAMPERING

Is Visible Smoke Being Emitted From the Vehicle?

TAMPERING CHECKLIST

1. Air Injection System	<input type="button" value="P"/>	Source: <input type="text"/>
2. EGR System	<input type="button" value="P"/>	Source: <input type="text"/>
3. Catalyst	<input type="button" value="P"/>	Source: <input type="text"/>
4. Fuel Inlet Restrictor	<input type="button" value="P"/>	Source: <input type="text"/>
5. Gas Cap	<input type="button" value="P"/>	

IS THIS INFORMATION CORRECT?

3:17 PM 07/19/02

- You must confirm your entries.
- Clicking **YES** locks in all your information.
- Once **YES** has been entered you cannot correct a error.If an error was present,you must complete the test and then retest the vehicle at no charge to the customer.
- A **NO** entry will allow you to correct any errors you may have made on this screen.

Inspection Fee

ENTER THE INSPECTION FEE \$
THIS WILL BE ADDED TO THE STATE
ADMINISTRATIVE FEE(S) AND THE
TOTAL FEE WILL BE PRINTED ON THE
VEHICLE INSPECTION REPORT.

3:17 PM

07/19/02

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- The maximum light duty fee that can be entered in the analyzer is \$24.50 for Clark County and \$24.50 for Washoe County.
- The maximum heavy duty fee that can be entered is \$26.00 for Clark County and \$25.50 for Washoe County.
- The analyzer will automatically add the \$5.00 certificate fee and the \$2.06 electronic transmission fee.

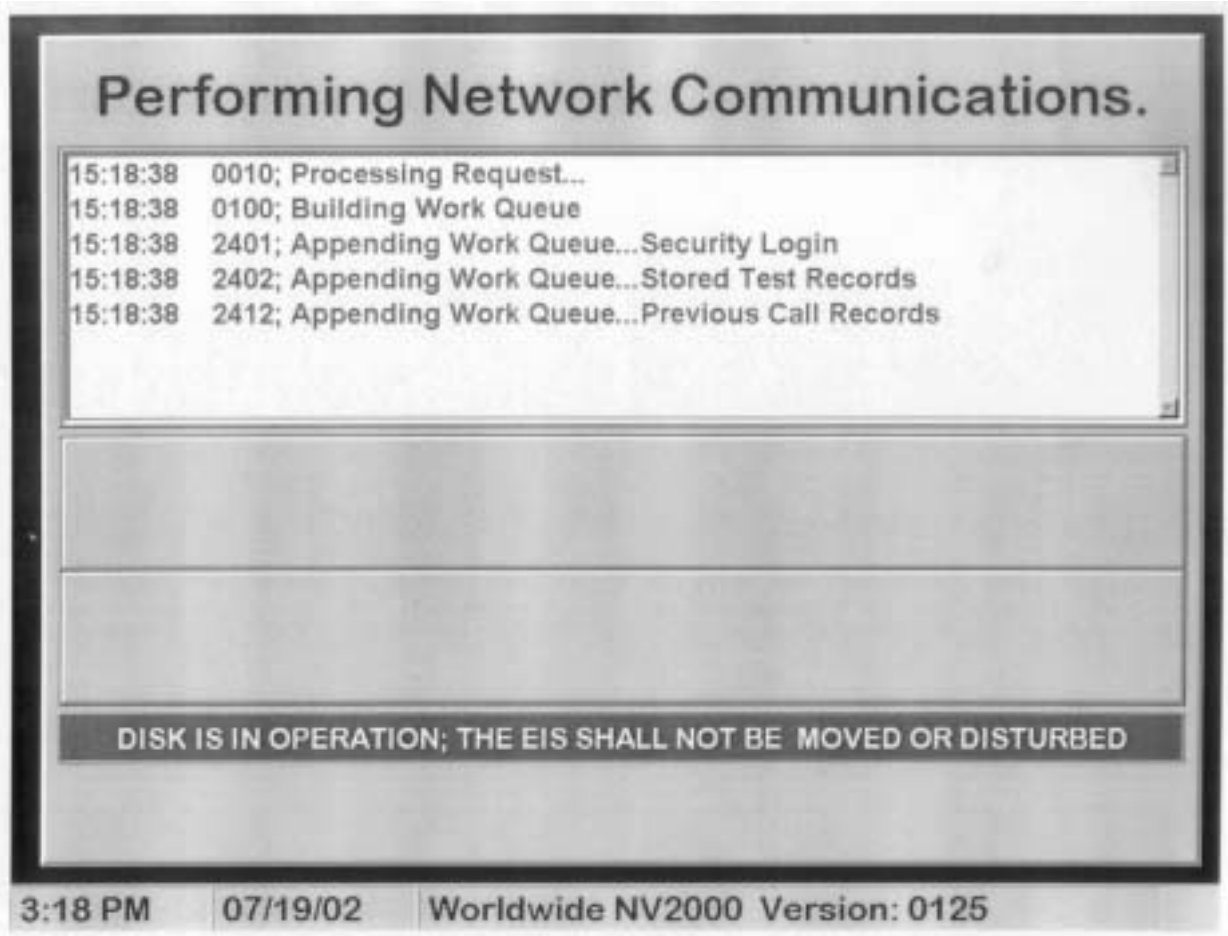
Maximum Emission Test Fee

Based on the annual shop labor rate survey conducted by the DMV and authorized by the Nevada Administrative Code **NAC 445B.599** and **445B.600**, the maximum amount allowable for an initial emissions inspection is listed below:

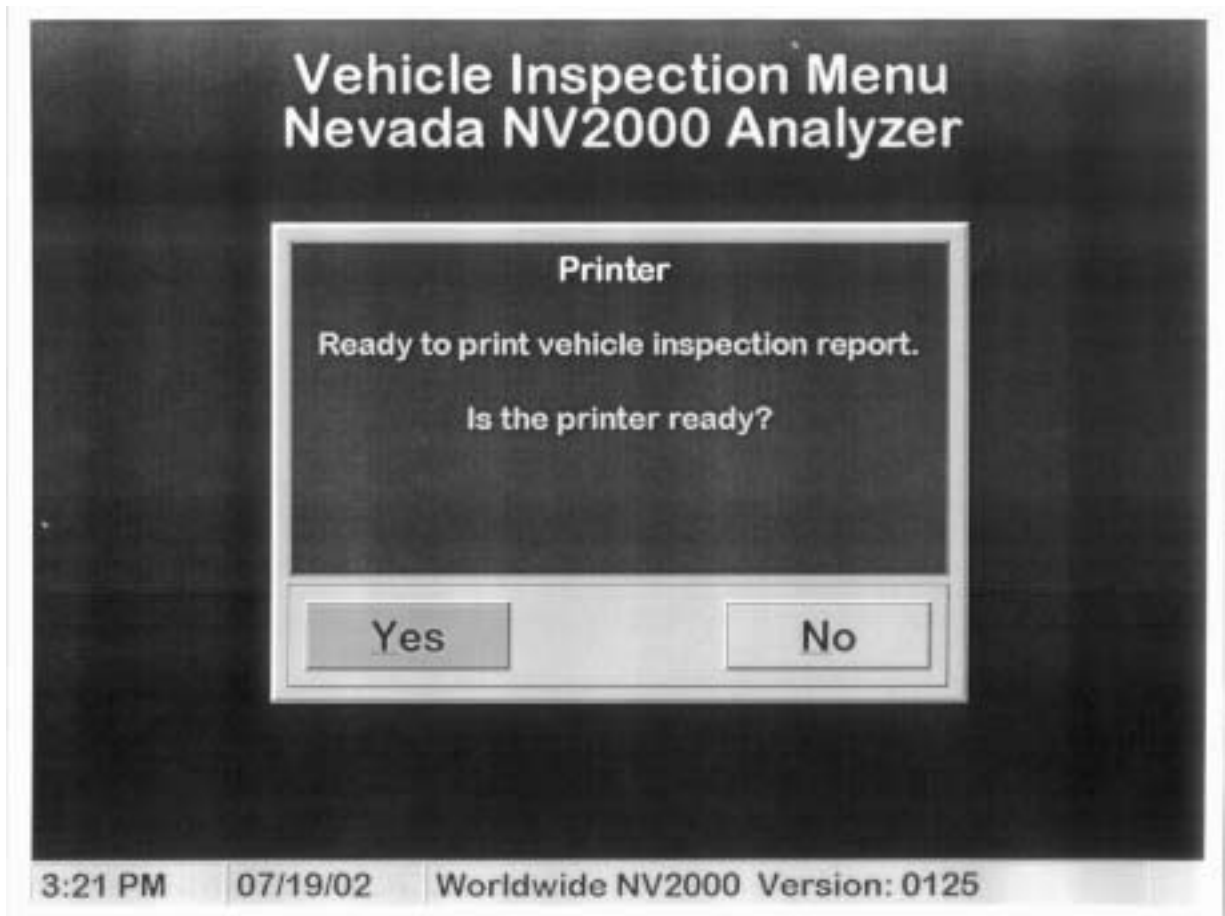
Effective January 1, 2003

Clark County		Washoe County	
<u>Light Duty</u>		<u>Light Duty</u>	
Max fee:	\$24.50	Max fee:	\$24.50
VIR fee:	\$5.00	VIR fee:	\$5.00
Electronic Fee:	<u>\$2.06</u>	Electronic Fee:	<u>\$2.06</u>
Total Fee	\$31.56	Total Fee:	\$31.56

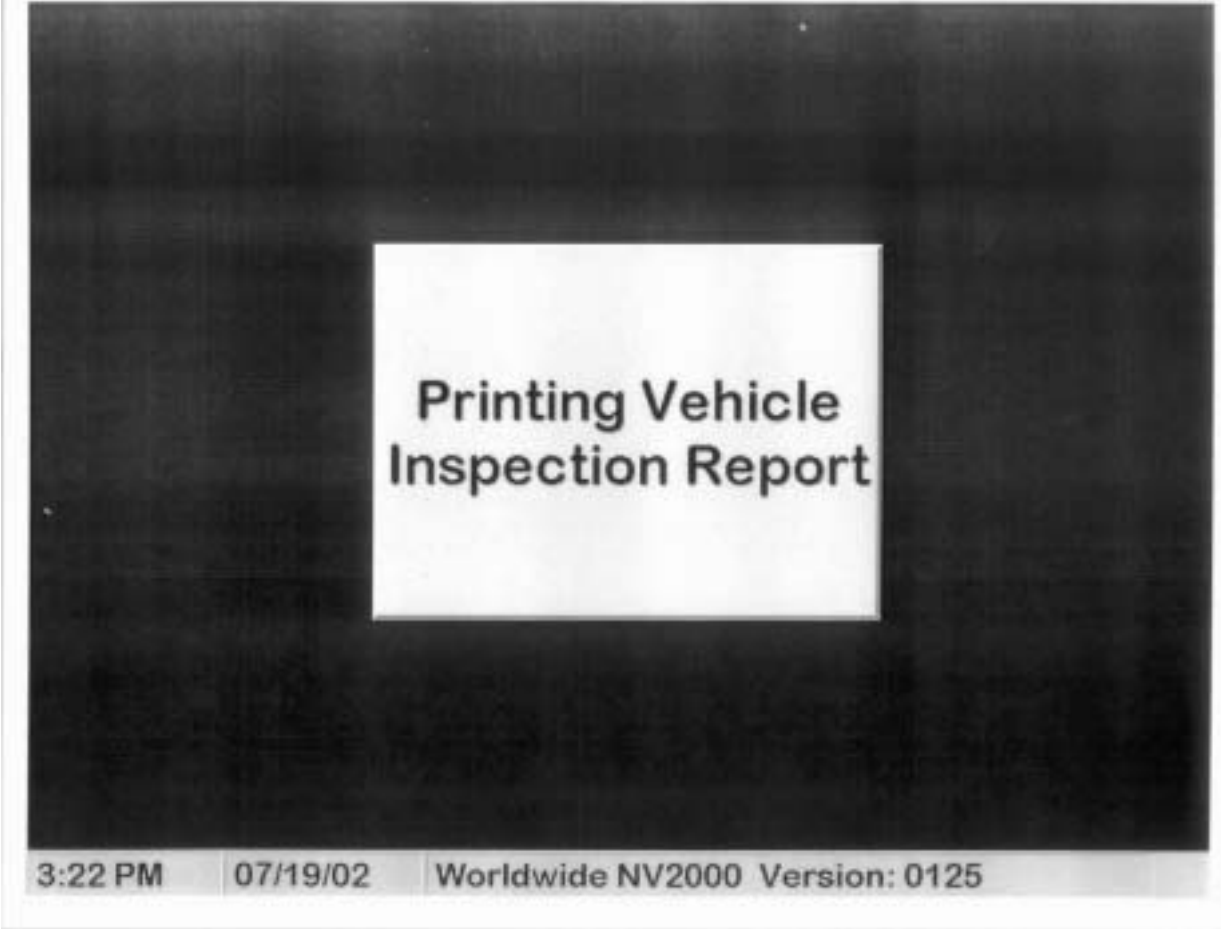
Clark County		Washoe County	
<u>Heavy Duty</u>		<u>Heavy Duty</u>	
Max fee:	\$26.00	Max fee:	\$25.50
VIR fee:	\$5.00	VIR fee:	\$5.00
Electronic Fee:	<u>\$2.06</u>	Electronic Fee:	<u>\$2.06</u>
Total Fee	\$33.06	Total Fee:	\$32.56



- The analyzer is now communicating with the (Vehicle Information Database)VID.
- The information you have just entered will now be downloaded to the VID.



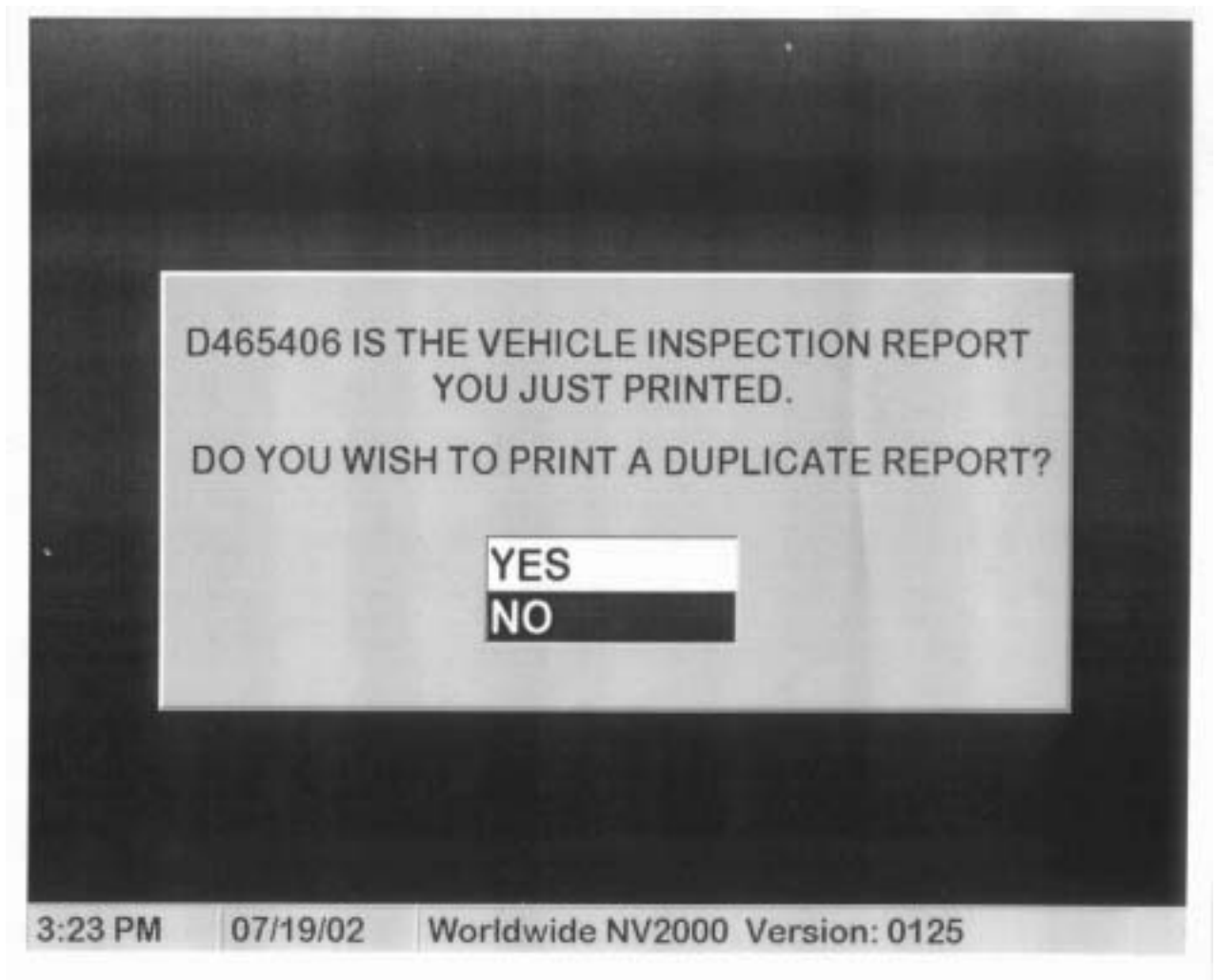
- If the printer is ready click the yes box to print your VIR.
- If the printer is not ready (out of paper or cartridge is empty) click on the no box.



Printing Vehicle
Inspection Report

3:22 PM 07/19/02 Worldwide NV2000 Version: 0125

- The analyzer is now printing your Vehicle Inspection Report (VIR).
- Remember to check the VIR for errors. Any error creates an invalid VIR.
- The test must be done again at no charge to the customer.



- If you want to print another VIR for your records or for the customer click the yes box.
- If you do not need another VIR click no.



NEVADA

VEHICLE INSPECTION REPORT (VIR) OVERALL INSPECTION RESULTS: PASSED



NO VIN MATCH IN THE VEHICLE REGISTRATION RECORDS.
THIS VEHICLE INSPECTION REPORT MUST BE PRESENTED FOR VEHICLE REGISTRATION.

BAR CODED VIN:



VEHICLE INFORMATION

Year: 1985
Make: HOND
Plate No: 816NCC
VIN: JHMA7623R67456767

Cylinders: 04
Type: Passenger
GVWR: N/A
Fuel: Gasoline

County: Washoe
ZIP: 89434
Odometer: 123456
Inspection Type: Initial Inspection

TAILPIPE RESULTS

VISIBLE SMOKE: PASS

	HC ppm			CO%			CO2	O2%	RPM
	<= Limit	Reading	Result	<= Limit	Reading	Result	Result	Result	Result
2500 ± 300	220	0	PASS	1.20	0.07	PASS	15.40	0.1	2603
Idle 775±425	220	5	PASS	1.20	0.01	PASS	15.20	0.1	731

TAMPER RESULTS

Air Inj. System	EGR System	Catalyst	Fuel Inlet Restrictor	Gas Cap
PASS	PASS	PASS	PASS	PASS

TEST INFORMATION

Station No: WIA000
Analyzer No: W700
Inspector No: 10045503

Test Date: 07/19/02
Start Time: 03:03:30 PM
End Time: 03:18:35 PM

DMV ID: 404614876637
VIR No: D465406

VIR Certification Fee: \$ 05.00
Electronic Transmission Surcharge Fee: \$ 02.06
Inspection Fee: \$ 00.00
Total Fee: \$ 07.06

This Emission Test Valid For Registration Purposes For 90 Days Upon Date Of Issuance.

- If all entries are correct you have created a valid VIR.
- A valid failing VIR will allow the customer to apply for a waiver, get a ten day permit or a challenge test if needed.
- A valid passing VIR will allow the customer to register the vehicle.
- If any errors are present on the VIR the test must be redone at no charge to the customer.

REMEMBER

- A Vehicle Inspection Report (VIR) is only good for 90 days. **No exceptions.**
- **The VIR is a legal document!**
- Do not alter the VIR in any way.
- Do not write on the VIR. (Other than for gas cap failure sign off)
- Any errors and the entire test must be done over again at no cost to the customer.

GAS CAP

- The only time you may write on a VIR is to sign off on a gas cap failure.
- Once you have verified that the gas cap has been replaced:
 - Write your license number, the date and sign your name directly above the gas cap failure.
 - You do not have to be the station or the inspector that failed the vehicle to sign off on the gas cap.
 - Any licensed inspector can sign off on the gas cap once it has been repaired.



NEVADA

RE-PRINT VEHICLE INSPECTION REPORT OVERALL INSPECTION RESULTS: FAILED



BAR CODED VIN:



VEHICLE INFORMATION

Year: 1996 Make: BUIC Plate No: 816NCW VIN: 2G4WB52K7T1486938	Cylinders: 06 Type: Passenger GVWR: N/A Fuel: Gasoline	County: Washoe ZIP: 89511 Odometer: 48683 Inspection Type: Initial Inspection
------------------------------------------------------------------------	-----------------------------------------------------------------	----------------------------------------------------------------------------------------

TAILPIPE RESULTS

VISIBLE SMOKE: PASS

	HC ppm			CO%			CO2	O2%	RPM
	<= Limit	Reading	Result	<= Limit	Reading	Result	Result	Result	Result
2500 ± 300	220	11	PASS	1.20	0.04	PASS	15.30	0.0	2652
Idle 775±425	220	85	PASS	1.20	0.15	PASS	15.20	0.2	716

9/24/2002
IDODMV
Ben Tempel

TAMPER RESULTS

Air Inj. System	EGR System	Catalyst	Fuel Inlet Restrictor	Gas Cap
N/A	PASS	PASS	PASS	FAIL

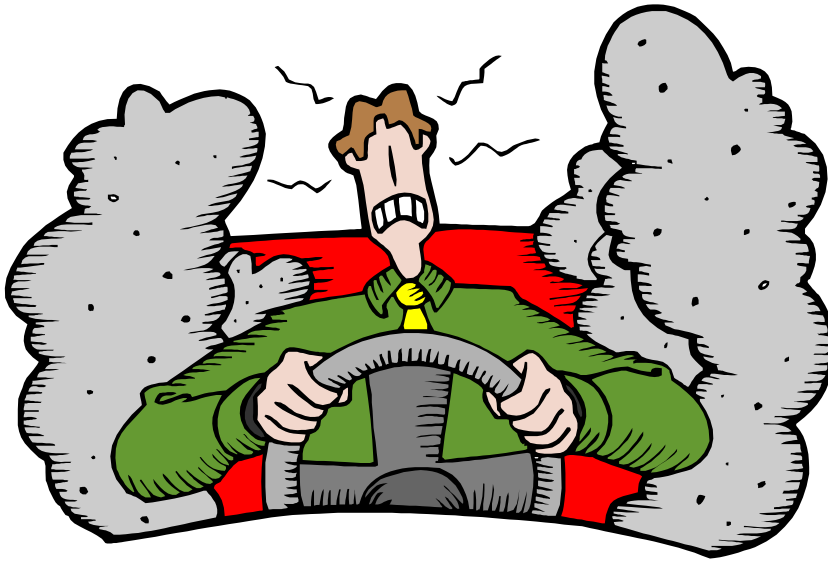
TEST INFORMATION

Station No: WEA000 Analyzer No: W701 Inspector No: I0045503	Test Date: 02/19/02 Start Time: 10:05:56 AM End Time: 10:26:03 AM	DMV ID: 374396897938 VIR No: D217679
-------------------------------------------------------------------	-------------------------------------------------------------------------	-----------------------------------------

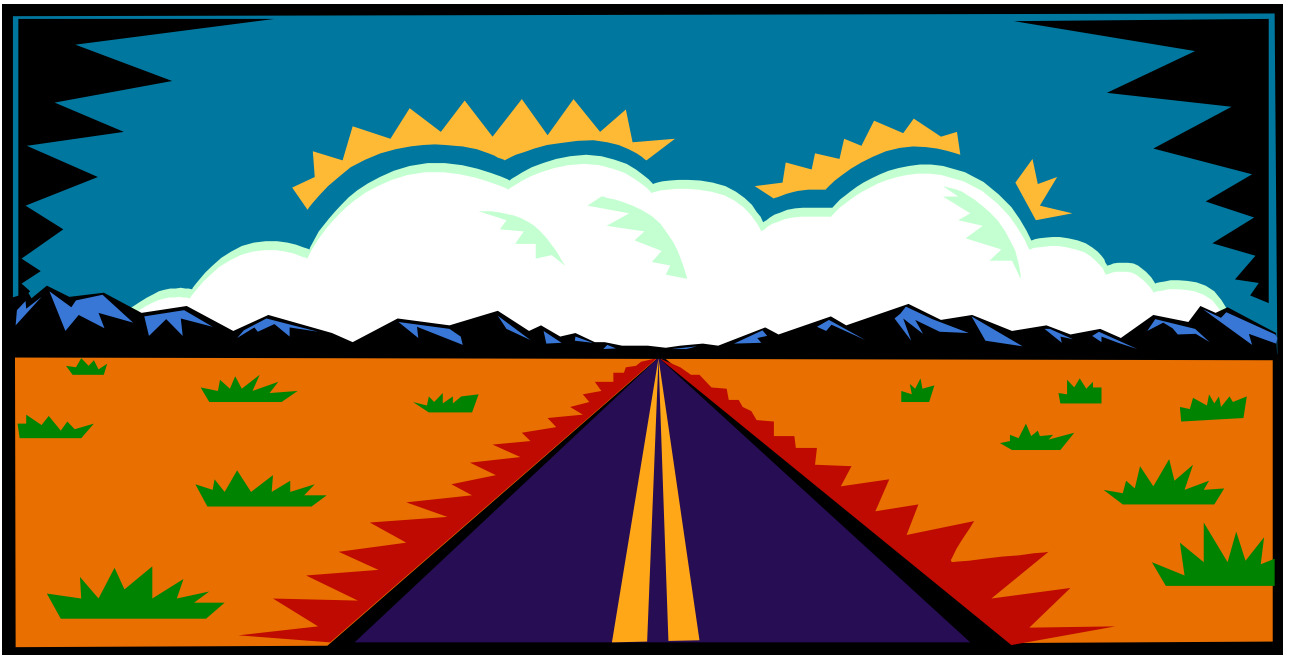
VIR Certification Fee: \$ 05.00
Electronic Transmission Surcharge Fee: \$ 02.06
Inspection Fee: \$ 24.50
Total Fee: \$ 31.56

This Emission Test Valid For Registration Purposes For 90 Days Upon Date Of Issuance.

1996-CURRENT LIGHT DUTY GASOLINE POWERED VEHICLES



OBD-II TESTING PROCEDURE



HOWTO OBD II

INTRODUCTION TO OBD II

- Why are we conducting (OBD-II) ON BOARD DIAGNOSTIC testing on 1996 and newer vehicles?
- This method of testing has been proven to be more effective in reducing the overall pollution levels from automobiles.
- OBD-II Testing is also federally mandated.

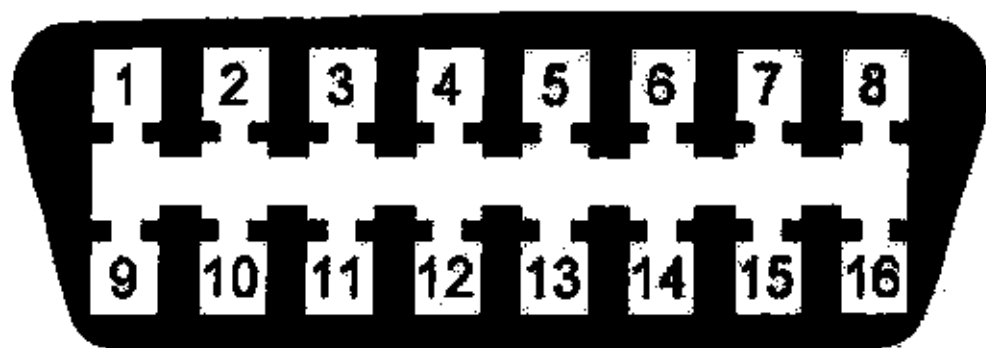
- OBD II testing is accomplished by using an on board computer system.
 - That continuously monitors various sensors
 - Adjusts the air/fuel ratio for maximum power
 - Fuel efficiency and the lowest possible emission levels.
 - Triggers trouble codes in the event of a problem that may increase pollution levels.
 - Stores trouble codes to be used in diagnosis and repair of emission related failures.



- If the computer (PCM/ECM) detects a fault that may cause the tailpipe emissions to exceed 1.5 times the Federal Test Procedure the PCM will command the Malfunction Indicator Lamp (MIL) on.
 - When a very severe problem exists the MALFUNCTION INDICATOR LAMP (MIL) will flash.
 - A flashing MIL indicates a problem exists that may cause catalyst damage.
 - The vehicle needs to be repaired as soon as possible.

- The goal of OBD-II testing is to catch an emission related failure before
 - Pollution levels increase and performance decreases.

- OBD II also has standardized the
 - Data Link Connector (DLC)

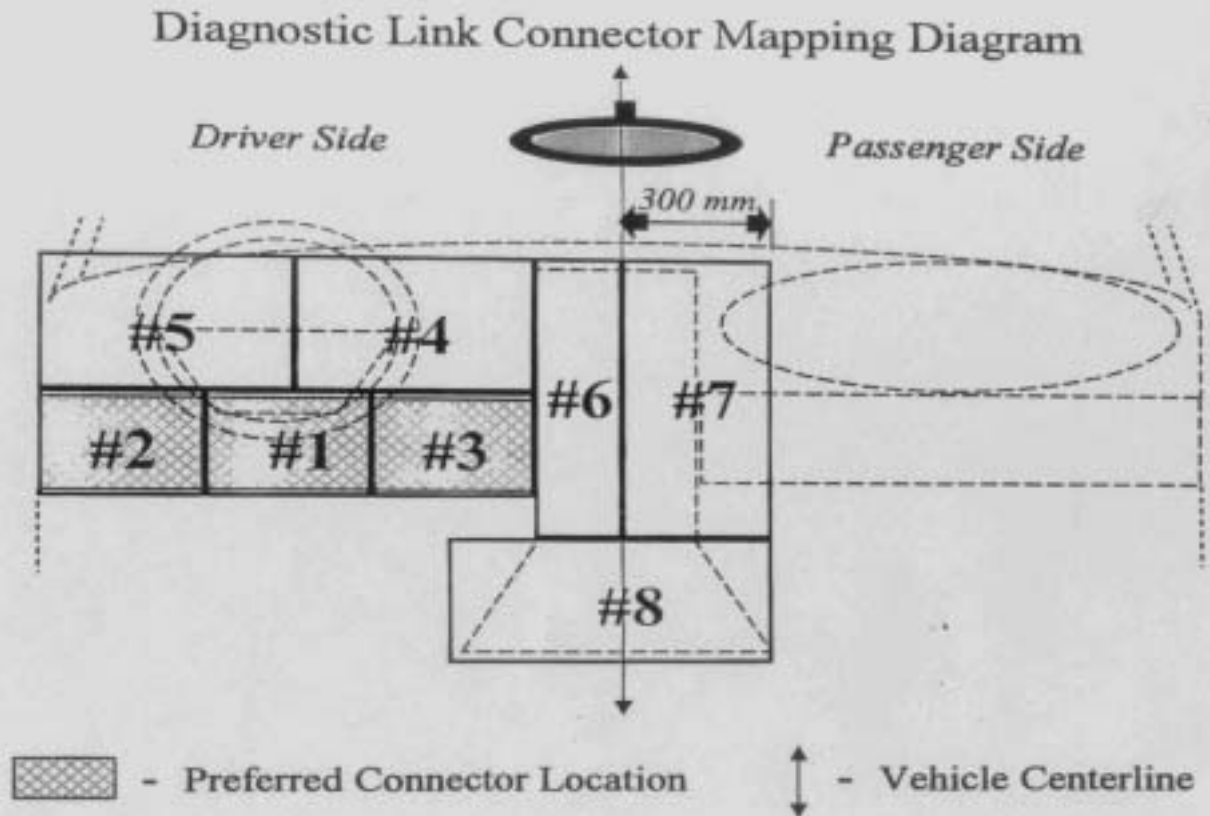


- Trouble codes
 - Used to HELP diagnose failures in an OBD II system.
 - Failed codes will be displayed by your analyzer
 - Can be easily looked up in your reference books.

DATA LINK CONNECTER

- The DLC can be at various locations in the vehicle.
 - As indicated on the enclosed chart.
 - A reference guide will help you locate the exact position of the DLC.

DIAGNOSTIC LINK CONNECTOR MAP



This chart shows the preferred locations for the DLC. Number 1 being the most preferred and number 8 being the least preferred.

SOURCES FOR QUICK REFERENCE FOR DLC

- ARI/EETN 610-992-9838 for Quick Reference Laminated Card.
- Weber State University Center for Automotive Science & Technology
(To access free DLC guide)

<http://autocenter.weber.edu/OBD.htm>

Colorado State University (Free DLC Guide) <http://www.obdiicsu.com/>

- Motor Reference Guide

1-800-426-6867

- Alldata

1-800-697-2533

- Mitchell On Demand

1-800-933-2039

- Snap-On Shop Key

Contact Your Local Dealer

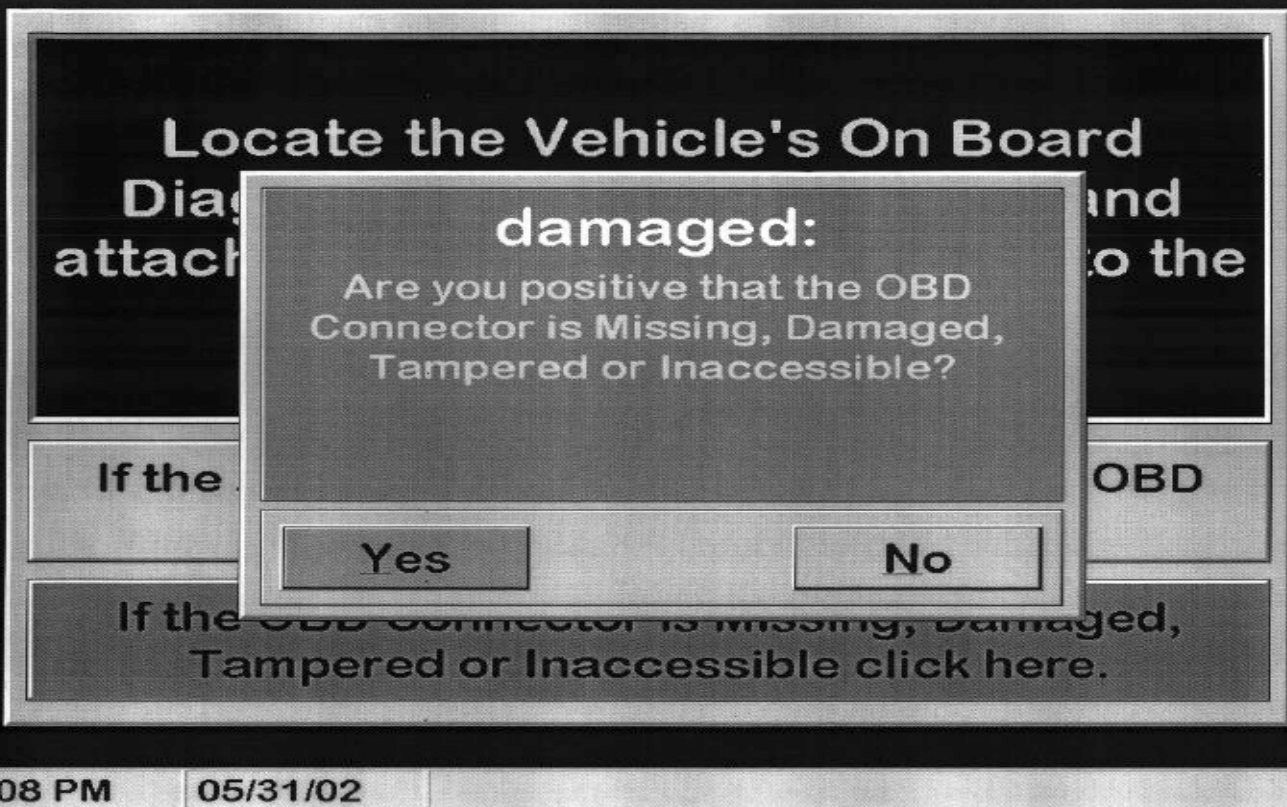
Locate the Vehicle's On Board Diagnostic (OBD) Connector and attach the analyzer's OBD port to the Vehicle's Connector.

If the Analyzer has been attached to the OBD Connector click here.

If the OBD Connector is Missing, Damaged, Tampered or Inaccessible click here.

10:56 AM 05/07/02

- Using a connector reference guide locate the OBD II connector.
- Connect the analyzer OBD II plug to the vehicle OBD II connector.
- If the connector is missing or damaged click on the missing or damaged connector box.



- If you entered that the OBD II connector was damaged on the previous screen the machine will now prompt you to confirm that entry.

WARNING

- If non-factory wiring is present at the OBD-II DLC **Do not connect to the analyzer or damage may result!**
- **Refer the vehicle to the Emission Lab.** 259

**Be SURE that the Vehicle is
in NEUTRAL or PARK with
the IGNITION OFF, BRAKES
APPLIED, and WHEELS
CHOCKED.**

CONTINUE

10:56 AM 05/07/02

- **SAFETY! SAFETY! SAFETY!**
- Be sure to place the vehicle in park or neutral apply the brake, turn the vehicle off and chock the wheels!

**Turn the Ignition switch to
the RUN POSITION with the
ENGINE OFF.**

**Observe the Malfunction Indicator Light (MIL) as
you turn the ignition switch to the run position
with the engine off.**

CONTINUE

10:57 AM 05/07/02

**SERVICE
ENGINE
SOON!**

**CHECK
ENGINE**



- Turn the ignition to the key on engine off position.
- Observe the Malfunction Indicator Lamp. (MIL)

**Did the Malfunction
Indicator Light Illuminate?**

YES

NO

10:57 AM 05/07/02

- Did the MIL come on or blink for any amount of time? Even a slight blink counts.
- If it came on or blinked click YES.
- If it did not come on or blink click NO.
- If the MIL is inoperative the vehicle will be rejected for testing and must be repaired.

Start the Vehicle!

While the engine is running, select the "Connect to Vehicle" button to establish communications with the vehicle

Connect to Vehicle

10:57 AM 05/07/02

- START THE ENGINE
- Click on the connect to vehicle box.

Connecting to OBD

Please Wait.
This will take a maximum of 30 Seconds.

10:58 AM 05/07/02

- The analyzer will now advise you to wait while communication is being established.

Error Connecting to OBD

No signal from the Vehicle OBD II Connector
Recheck connections and press "Connect to
Vehicle" or press "Unable to Connect" to
proceed.

Connect to Vehicle

Unable to Connect

10:58 AM 05/07/02

- If an ERROR CONNECTING TO OBD comes up on the screen check connections at the OBD connector.
- Try connecting again. If the vehicle still will not communicate try pushing the OBD II reset button on the back of the analyzer.
- If no communication can be established click on the unable to connect box. The vehicle will be rejected for testing and must be repaired.

Checking RPM: 29%

Key ON Engine RUNNING check.
Verifying that Engine is Running prior to
performing OBD Test.
RPM: 576

10:02 AM 06/14/02

- If there is no error connecting to OBD-II the test will now continue.
- The analyzer will now verify the engine is running.
- If no tachometer signal can be obtained thru the DLC the vehicle will be rejected for testing and must be repaired.

Checking RPM: 60%

Key ON Engine RUNNING check.
Verifying that Engine is Running prior to
performing OBD Test.
RPM: 585

02 AM 06/14/02

- The RPM bar must reach 100% before the test can continue.

Misfire:	001: Completed
Fuel System:	001: Completed
Comprehensive Component:	001: Completed
Catalyst:	002: Completed
Heated Catalyst:	000: Not Supported/Enabled
Evaporative System:	000: Not Supported/Enabled
Secondary Air System:	000: Not Supported/Enabled
Air Conditioning System:	000: Not Supported/Enabled
Oxygen Sensor:	002: Completed
Oxygen Sensor Heater:	002: Completed
EGR System:	002: Completed

OBDII Readiness Evaluation PASSED.

Press Continue to Proceed.

Max Unset: 2 - Unset: 0

Continue

11:05 AM 05/07/02

- Next the OBD II readiness screen is displayed. It shows the maximum number of readiness monitors that are allowed to be unset and displays the number that are actually unset.
- If the maximum number of unset monitors allowed is two and the number of unset monitors is zero the vehicle passes.
- 1996-2000 maximum allowed unset readiness monitors = 2
- 2001-2002 = 1

Misfire:	001: Completed
Fuel System:	001: Completed
Comprehensive Component:	001: Completed
Catalyst:	002: Completed
Heated Catalyst:	000: Not Supported/Enabled
Evaporative System:	000: Not Supported/Enabled
Secondary Air System:	000: Not Supported/Enabled
Air Conditioning System:	000: Not Supported/Enabled
Oxygen Sensor:	002: Completed
Oxygen Sensor Heater:	002: Completed
EGR System:	002: Completed

OBDII Readiness Evaluation PASSED.

Press Continue to Proceed.

Max Unset: 2 - Unset: 0

Continue

11:05 AM 05/07/02

- If maximum number of unset readiness monitors allowed is two. The number of unset readiness monitors stored in the PCM is four the vehicle must be returned to the customer. The vehicle does not fail it is **rejected** because too many readiness monitors are unset. The vehicle **must be** driven, under varying driving conditions, for three to seven days to allow the on board computer to run the readiness monitors to completion.

Misfire:	001: Completed
Fuel System:	001: Completed
Comprehensive Component:	001: Completed
Catalyst:	002: Completed
Heated Catalyst:	000: Not Supported/Enabled
Evaporative System:	000: Not Supported/Enabled
Secondary Air System:	000: Not Supported/Enabled
Air Conditioning System:	000: Not Supported/Enabled
Oxygen Sensor:	002: Completed
Oxygen Sensor Heater:	002: Completed
EGR System:	002: Completed

OBDII Readiness Evaluation PASSED.

Press Continue to Proceed.

Max Unset: 2 - Unset: 0

Continue

11:05 AM 05/07/02

- The vehicle must then be retested.
- If the readiness monitors still have not run send the vehicle in for repair.

Malfunction Indicator Light (MIL):

OFF

Diagnostic Trouble Codes
(DTCs) Found:

00

DTC Code and MIL Status PASSED.
Press Continue to Proceed.

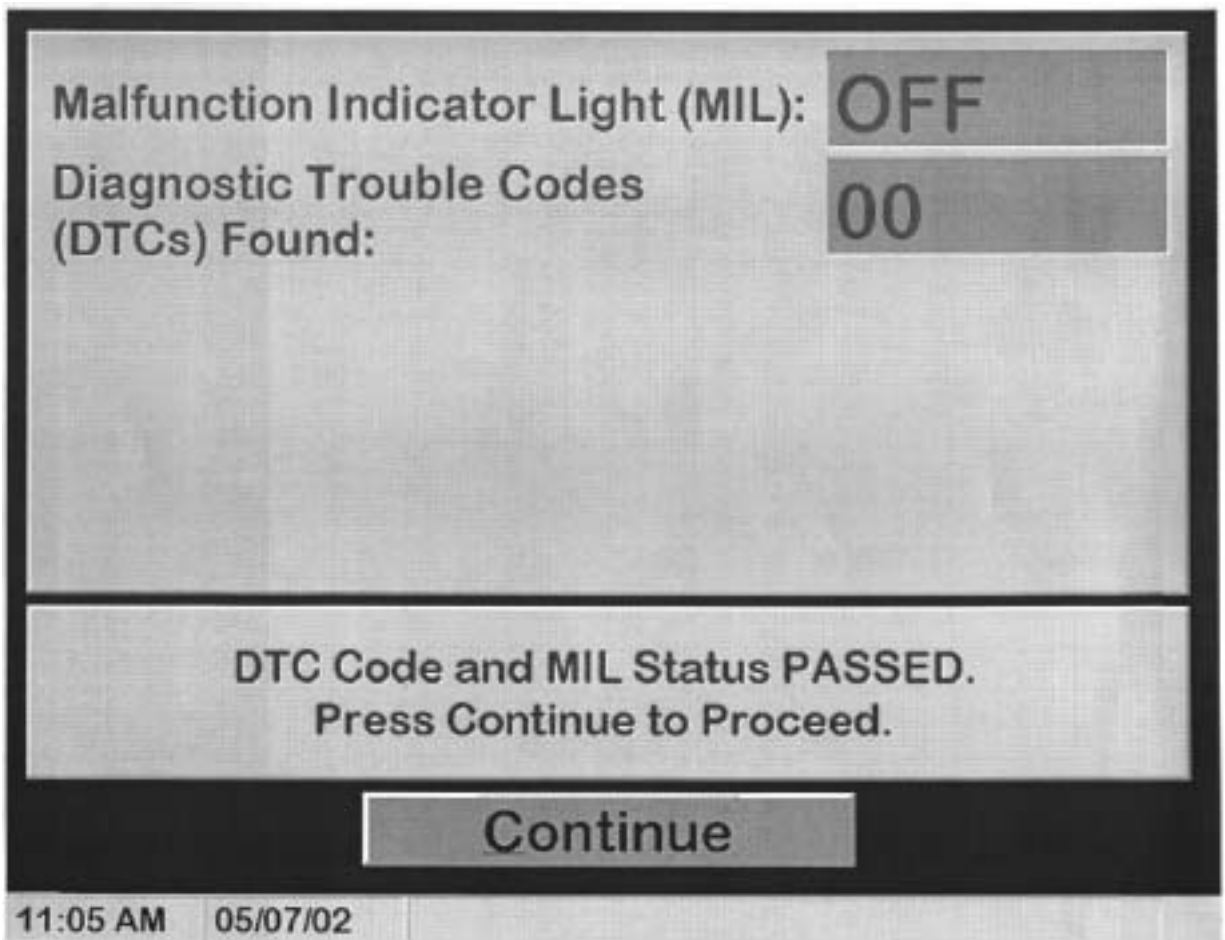
Continue

11:05 AM 05/07/02

The Malfunction Indicator Lamp (MIL)
indicates the MIL status.

The conditions indicated are:

- 1) ON= Vehicle Fails The Test.
- 2) OFF= Vehicle Passes The Test



3) Flashing MIL = A Condition Exists that:

- May cause Catalyst Damage.
 - Service as soon as possible
- A vehicle with this condition will fail the OBDII Emission Test.

Malfunction Indicator Light (MIL): **ON**

Diagnostic Trouble Codes
(DTCs) Found:

01

P0300

**DTC Code and MIL Status FAILED.
Press Continue to Proceed.**

Continue

12:27 PM 05/31/02

- If the MIL is on, the diagnostic trouble code or codes will be displayed on this screen. These codes can be translated using an OBD II reference guide book.
- You may also enter the vehicle diagnostic screen in the OBD II manual mode to check for codes and definitions.

VISIBLE SMOKE / TAMPERING

Is Visible Smoke Being Emitted From the Vehicle?

N

IS THIS INFORMATION CORRECT?

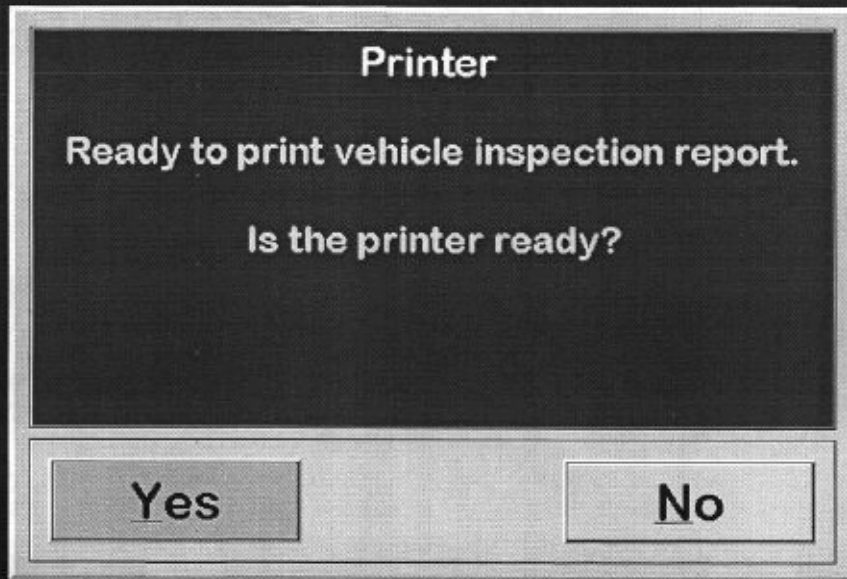
YES

NO

10:03 AM 06/14/02

- Was the vehicle smoking at any time during the test? (Smoke must be coming from tailpipe or crankcase)
- If so:
- Enter a Y for Yes
- Enter a N for NO
- A Yes entry will cause a test failure

Vehicle Inspection Menu Nevada NV2000 Analyzer



11:08 AM 05/07/02 Worldwide NV2000 Version: 0125

- The analyzer will now prompt you to print a VIR. If you are ready click yes.



NEVADA

VEHICLE INSPECTION REPORT (VIR) OVERALL INSPECTION RESULTS: PASSED



VEHICLE INFORMATION DID NOT MATCH REGISTRATION RECORDS. THIS VEHICLE INSPECTION REPORT MUST BE PRESENTED FOR VEHICLE REGISTRATION.

BAR CODED VIN:



VEHICLE INFORMATION

*Year: 2000 *Make: AC *Plate No: 591LBS VIN: 1FTEX15Y4KKB30490	*Cylinders: 04 Type: Passenger GVWR: N/A Fuel: Gasoline	County: Washoe ZIP: 89433 Odometer: 12345 Inspection Type: Initial Inspection
-------------------------------------------------------------------------	------------------------------------------------------------------	----------------------------------------------------------------------------------------

ON BOARD DIAGNOSTIC SYSTEM OBD: PASS
Malfunction Indicator Light: OFF

VISIBLE SMOKE: PASS

The following monitors were not ready: 0

- Check your VIR for accuracy. If you find you have made any errors you must retest the vehicle at no charge to the customer. Do not send the customer to the DMV with a invalid VIR.

TAMPER RESULTS

Air Inj. System	EGR System	Catalyst	Fuel Inlet Restrictor	Gas Cap
N/A	N/A	N/A	N/A	N/A

TEST INFORMATION

Station No: WEA000 Analyzer No: W701 Inspector No: I0045503	Test Date: 05/07/02 Start Time: 10:54:03 AM End Time: 11:06:37 AM	DMV ID: 834977844630 VIR No: D217736
-------------------------------------------------------------------	-------------------------------------------------------------------------	-----------------------------------------

VIR Certification Fee:	\$ 05.00
Electronic Transmission Surcharge Fee:	\$ 02.06
Inspection Fee:	<u>\$ 00.00</u>
Total Fee:	\$ 07.06

This Emission Test Valid For Registration Purposes For 90 Days Upon Date Of Issuance.



NEVADA

VEHICLE INSPECTION REPORT (VIR) OVERALL INSPECTION RESULTS: PASSED



VEHICLE INFORMATION DID NOT MATCH REGISTRATION RECORDS. THIS VEHICLE INSPECTION REPORT MUST BE PRESENTED FOR VEHICLE REGISTRATION.

BAR CODED VIN:



VEHICLE INFORMATION

Year: 1996 Make: FORD *Plate No: None VIN: 1FTCR10A4TPA06476	Cylinders: 04 Type: Passenger GVWR: N/A Fuel: Gasoline	County: Other ZIP: 89721 Odometer: 55678 Inspection Type: Initial Inspection
-----------------------------------------------------------------------	-----------------------------------------------------------------	---------------------------------------------------------------------------------------

ON BOARD DIAGNOSTIC SYSTEM OBD: PASS
Malfunction Indicator Light: OFF

VISIBLE SMOKE: PASS

The following monitors were not ready: 0

TAMPER RESULTS

Air Inj. System	EGR System	Catalyst	Fuel Inlet Restrictor	Gas Cap
N/A	N/A	N/A	N/A	N/A

TEST INFORMATION

Station No: WEA000 Analyzer No: W700 Inspector No: I0045907	Test Date: 10/01/02 Start Time: 04:49:19 PM End Time: 04:52:52 PM	DMV ID: 254774845536 VIR No: D465455
-------------------------------------------------------------------	-------------------------------------------------------------------------	-----------------------------------------

VIR Certification Fee:	\$ 05.00
Electronic Transmission Surcharge Fee:	\$ 02.06
Inspection Fee:	\$ 00.00
Total Fee:	\$ 07.06

This Emission Test Valid For Registration Purposes For 90 Days Upon Date Of Issuance.

- Do not write on your VIRS!
- The only exception is to sign off on a gas cap!

D217736 IS THE VEHICLE INSPECTION REPORT
YOU JUST PRINTED.

DO YOU WISH TO PRINT A DUPLICATE REPORT?

YES

NO

09 AM 05/07/02 Worldwide NV2000 Version: 0125

- You may wish to print additional VIR copies for your records or for your customers. Just click on yes. You have completed the OBD II inspection.

- COMMUNICATE WITH YOUR CUSTOMER
- Let your customer know if they passed, failed or were rejected for testing.
- Do not send the customer in to DMV Registration with a failing VIR.
- Send your customer to the Emission Lab if needed.

CALIBRATION GAS BOTTLE LABELS

BLEND CODE 34 97 HIGH W/O NO
CONCENTRATION

CERTIFIED BLENDER

3200ppm C₃H₈

N/A ppm THC

BAR # SA00123126

8.04 % CO

LOT # 11082001

12.0% CO₂

FILLED- 11082001

N/A ppm NO

EXPIRES- 1108004

N/A% O₂

BALANCE N₂

Accuracy: +/- 1%

Bureau of Automotive Repair

Department of Consumer Affairs

- The correct **HIGH** gas values, to be entered, based on the label above are:
 - 3200 ppm H/C
 - 8.04 % CO
 - 12.0 % CO₂

CALIBRATION GAS BOTTLE LABELS

BLEND CODE 31

97 LOW W/O NO

CONCENTRATION

CERTIFIED BLENDER

199 ppm C₃H₈

N/A ppm THC

BAR# SA01152332

0.50 % CO

LOT # 013020022

6.0 % CO₂

FILLED- 013020022

N/A ppm NO

EXPIRES- 01302005

N/A % O₂

BALANCE N₂

Accuracy: +/- 1%

Bureau of Automotive Repair

Department of Consumer Affairs

- The correct **LOW** gas values, to be entered , based on the label above are:
- 199 ppm H/C
 - 0.50 % CO
 - 6.0 % CO₂

- This is the pre-practical training check list.
- You must:
 - Check off each item as you are trained and feel competent that you can perform that task.
 - Do not check off if you are uncertain of your ability. Ask for more training.
 - When your training is complete sign and date.
 - Bring the checklist to the Practical or you will not be admitted.
 - By signing the checklist you are telling us you know the material.

The following is the analyzer demonstration examination. If you do not have a certificate of competence provided by Worldwide you will have to demonstrate proficiency on the machine.

MACHINE FAMILIARITY

- Access printer

- Check printer settings

- Add paper

- Power up analyzer

NAVIGATING ANALYZER SCREENS

- Access Main Menu

- Explain Vehicle Inspection selection

- Explain Vehicle Diagnostics selection

- Explain Analyzer Maintenance selection

- Explain Station Manager selection

- Explain State Audit selection

- Explain Service Menu selection

- Explain System Shutdown selection

ACCESS VEHICLE INSPECTION MENU

- Reprint VIR

- Access Training Mode

- Access RPM Pick-up Screen

ACCESS VEHICLE DIAGNOSTICS MENU

Access and explain 4 Gas selection

Access and explain OBD II Diagnostics selection

Access and explain RPM selection

Access and explain Zero Analyzer selection

ACCESS MAINTENANCE MENU

Access and explain Gas calibration

Access and explain Leak Check

Access and explain Status screen

Access and explain Network Diagnostics

STATION MANAGER

Access Station Managers Menu and explain

Perform Maintenance on filters, screens & traps

Twenty correct are needed to pass

EMISSION INSPECTION PRACTICAL EXAMINATION TRAINING CHECKLIST

As an applicant for license as an emission inspector in the state of Nevada you will be required to pass a practical demonstration examination. If you know how to perform all the following procedures you should pass. To be as prepared as possible you should use this check sheet as you are being trained and check off each item as you learn it. When the checklist is completely checked off you should be ready for the examination. Do not check off any item you are unsure of, ask the instructor for further clarification.

This checklist must be turned in at the time of the examination.

PRE-INSPECTION PROCEDURE

Perform a three day calibration

Change calibration gas bottles (verbal explanation acceptable)

Enter Status Screen

Perform Data File Refresh

Enter I/M test mode

Ensure the vehicle is at operating temperature (gauges, hoses, cat, etc.)

Why is an inspection necessary? (county, city, Zip code, Etc.)

Enter Inspectors license number

Enter Inspectors access code

At this point the time begins on the analyzer. There is a thirty (30) minute time limit for this portion of the examination.

Enter VIN from proper location

Enter license plate type (1-NV, 2-non-NV, 3-Government, 4- no plate)

Enter license plate number

Enter County

Enter zip code

Enter vehicle model year

Enter vehicle type (P-Passenger, T-Truck, M-Motorhome)

Enter GVWR if Truck

Enter vehicle make

Enter number of cylinders or R for rotary

Enter type of fuel

Enter type of ignition

Enter dual or single exhaust

Enter odometer reading

Enter AIR equipped (for dilution standards)

Ensure all accessories are off, parking brake set and wheels chocked

Attach Tach lead

Demonstrate three methods to get a Tach signal

Insert probe(s) properly

Perform the 2500 RPM portion of the test

Perform the idle portion of the test

Perform a second chance test if needed

Perform visual verification of smoke at Idle and 2500 RPM

Perform a tampering inspection for secondary Air Injection

Perform tampering inspection for EGR system

Perform tampering inspection for Catalytic Converter(s)

Perform tampering inspection for Fuel Inlet Restrictor

Perform tampering inspection for proper sealed gas cap

Enter inspection fee

Print vehicle inspection report

POST-INSPECTION REVIEW

Verbal explanation of the results of this test

Verbal explanation of a tampering failure

Verbal explanation of a smoking failure

Verbal explanation of a tailpipe failure

Verbal explanation of the waiver requirements in both Clark and Washoe counties

Verbal explanation of components, probable location and operational need for the secondary Air Injection system

Verbal explanation of components, probable location and operational need for the EGR system

Verbal explanation of components, probable location and operational need for Catalytic converter

Verbal explanation of the operational need for the Fuel Inlet Restrictor

Verbal explanation of the operational need for the Gas Cap

OBD TESTING

Determine OBD status (light duty passenger vehicle, 1996 or newer)

Locate & connect to DLC (missing, damaged or inaccessible)

Chock wheels, place in park or neutral, Etc.

Key On Engine Off, did the MIL light?

Start Engine & click Connect to Vehicle

If error connecting comes up then what? (try again, etc.)

Readiness monitors, if too many then what?

MIL status and DTC screen

Is the vehicle smoking? Yes or no

Print VIR

The preceding three pages are the training checklist and should be completely covered prior to attempting the Practical examination. As each item is explained to your satisfaction you should check off that particular box. Do not check off a box if you are unsure.

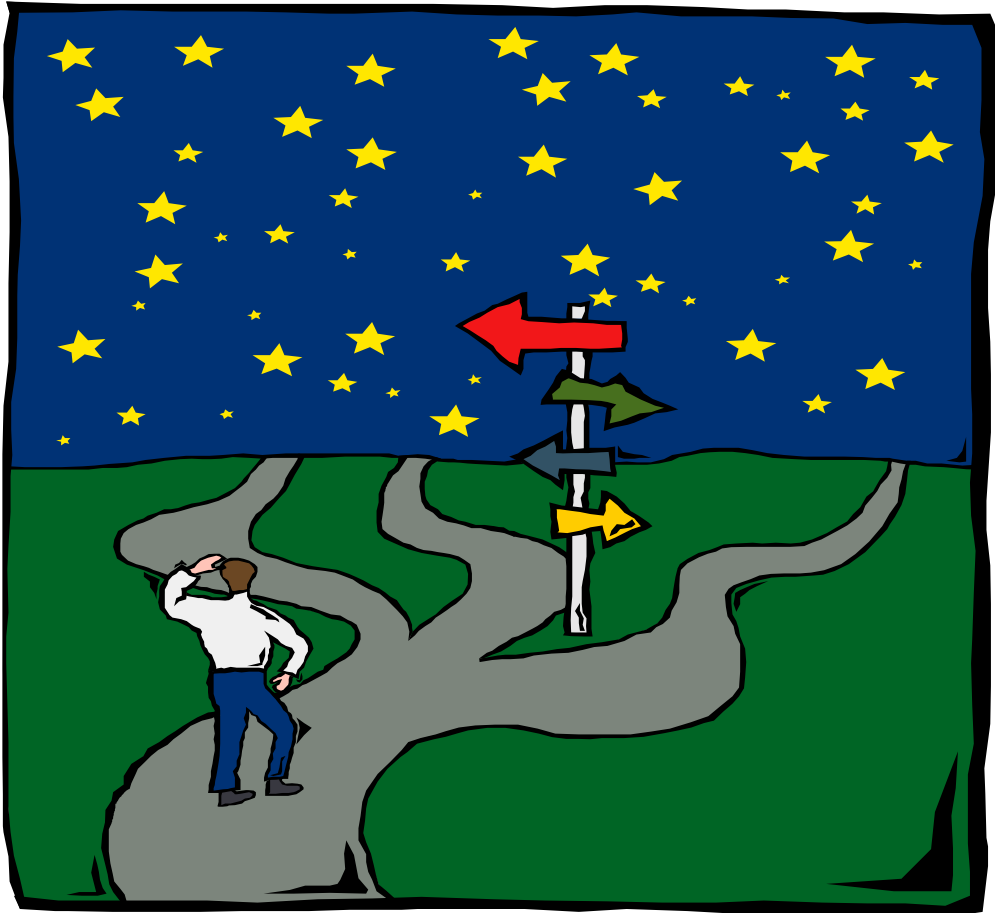
When you have all boxes checked off have your instructor sign this sheet and then you sign and date it, signifying that you have been instructed in all areas of the practical examination, then bring this checklist with you to the practical examination.

Instructor _____

Applicant _____

Date _____

TEST DEVIATIONS



- WHAT TO WATCH OUT FOR

WARNING
YOU ARE STRONGLY
CAUTIONED NOT TO
TEST THESE VEHICLES!
REFER TO DEALER

- PEUGEOT– 1986-1987, 505'S with the ZF-4 speed automatic transmission.
- VOLVO– 1984-1988, all vehicles with ZF 4-speed automatic transmission. (These are installed in the 740's except turbo's)
- BMW– 1984-1986, all with ZF 4-speed automatic transmission. This also applies to 1987 635 CSI and 735i and L7.

You may be liable if you incorrectly test one of the above vehicles and transmission damage occurs!

- **NOTE: OTHER VEHICLES MAY HAVE ZF-4 TRANSMISSIONS AND/OR OTHER SPECIAL TESTING PROCEDURES, IT IS THE INSPECTORS RESPONSIBILITY TO KNOW THE VEHICLE REQUIREMENTS FOR THE VEHICLE THEY ARE TESTING.**

PEUGEOT

- September, 1991
- Notice to inspection station owners and operators:
- In order to avoid damage to ZF 4 speed automatic transmissions, the following recommended preconditioning procedure should be used for emission testing of 1986 and 1987 Peugeot 505 vehicles:
 - Perform the initial emission test; if the vehicle fails proceed as follows:
 - Remove foot from gas pedal, step on brake and shift into “DRIVE”.
 - Allow the engine to idle for 15 seconds
 - Shift into “PARK”
 - Turn the engine off for two minutes
 - Restart the engine and precondition at no more than 2000 RPM for a maximum of two minutes with the transmission in “PARK”

PEUGEOT CONTINUED

- Check tailpipe emissions

IMPORTANT:

These steps must be followed exactly or serious transmission damage can result. Transmission damage resulting from not following the prescribed procedure is not considered a manufacturing defect.

VOLVO SERVICE BULLETIN

- September, 1991
 - All models equipped with the ZF 4 automatic transmission and gasoline engine (1985-88 740 models, except turbocharged models), which will undergo a high idle emission check such as the California smog check, must first be tested and (catalyst) preconditioned according to the following procedure.
 - Please ensure that the following testing and (catalyst) preconditioning test instructions are distributed to the dealership emission and smog inspectors.

VOLVO

CONTINUED

- A) HIGH IDLE EMISSION TEST SEQUENCE

- 1) Before beginning the emission test, ensure the engine is at normal operating temperature. If not, the vehicle should be driven until it is. Do not warm the engine by raising the RPM above idle while the transmission is in PARK or Neutral.
- 2) After the engine reaches normal operating temperature, place the transmission into PARK and switch the ignition off for 30 seconds. Restart the engine. After the engine is started, do not move the gear selector through the forward or reverse gears before or during the test sequence. **DO NOT EXCEED 2000 RPM!**

First stage: High idle 1850 (+/-150RPM) for 30 seconds.

Second stage: Idle RPM (see standards for maximum) for 30 seconds.

VOLVO CONTINUED

- B) If a second chance emission test is required the following preconditioning instructions must be followed:
 - 1) Confirm installation of the ZF 4-speed automatic transmission in the vehicle. Only ZF-4equipped Volvo,s have a shift quadrant with the gear shift positions * P-R-N-D-3-2-1*. There is no separate “overdrive “ engagement switch on the selector lever itself.
 - 2) Perform ZF specific emission test as outlined above. If the vehicle fails, do not proceed with the programmed preconditioning sequence. You must abort the test.
 - 3) Ensure the gear shift lever is in P (PARK) position.

VOLVO CONTINUED

- 4) Precondition at 1850 RPM (+/- 150 RPM) FOR 4 minutes.
- 5) Allow the engine to return to idle speed.
- 6) Check the tailpipe emissions with BAR 90 analyzer in manual mode. If emissions are not within limits, diagnose the problem, make repairs, and recheck again in the manual mode. If emissions are within limits, rerun the initial test as soon as possible.
- **NOTE:**
- **ENGINE SPEED MUST NOT EXCEED 2000 RPM OR SERIOUS TRANSMISSION DAMAGE COULD RESULT.**

BMW SERVICE INFORMATION

- Transmission failure during exhaust emission testing.
- Affected vehicles:
- All 1984, 1985, 1986 with 4-speed automatic(ZF-4) transmission 1987 635CSI, 735I, AND L7.
- The States of California and Texas have reported isolated cases of automatic transmissions failing immediately after performing an exhaust emissions check.
- The failures have resulted from a preconditioning procedure where the engine is held at high RPM for several minutes.

BMW TEST PROCEDURE

- **SOLUTION:**
- For vehicles equipped with the ZF-4 speed automatic transmission, the following modified preconditioning procedure should be used when testing the above mentioned models:
 - 1) Remove foot from gas pedal. Allow vehicle to idle a few seconds in “DRIVE” position, with brake applied.
 - 2) Shift to “PARK”
 - 3) Turn engine off.
 - 4) Wait at least 2 minutes.
 - 5) Restart engine.
 - 6) Engine may be preconditioned at a maximum of 2000 RPM for up to 2 minutes, with transmission still in “PARK” position.

BMW TEST PROCEDURE

- 7) Resume standard test procedure.
- If the above steps are not followed, serious transmission damage can result.
- **NOTE:**
- **Due to the unusual nature of the emissions check, this type of failure does not take place under normal operating conditions.**

- **VEHICLE MAKE:**
- All General Motors vehicles with a Y engine. The engine can be identified by a Y in the eight digit of the VIN code.
- **SYMPTOM:**
- Exhaust emission level failure, either at high speed or idle test.
- **REMEDY:**
- Vehicle must be tested without turning off engine. Test at the high end of the RPM window during cruise speed test. If the vehicle fails, refer to the DMV Emission Lab for a challenge test.

- **VEHICLE MAKE:**
- 1983 And newer Mazda RX7 model vehicles.
- **SYMPTOM:**
- Vehicle may fail either high or low speed emission levels, possibly both if allowed to idle more than 60 seconds.
- **REMEDY:**
- Turn off engine, pause and restart. Begin I/M test without allowing engine to idle for a long period of time.

- **VEHICLE MAKE:**
- 1986 and 1987 Nissan 200SX model vehicles.
- **SYMPTOM:**
- Exhaust emission level failure, either at high speed or idle test.
- **REMEDY:**
- Vehicle may meet exhaust emission levels after second chance test is performed. If the vehicle fails, refer to the DMV Emission Lab for a challenge test.

- **VEHICLE MAKE:**
- All Honda vehicles that have fuel injection.
- **SYMPTOM:**
- Carbon Monoxide failure, either at high speed or during the idle test.
- **REMEDY:**
- Vehicles must be tested without turning off the engine. The computer will then maintain the proper air/fuel mixture.